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PARAMETERS LISTING SYSTEM
(PALIS)

March 1989

Environment
Ontario
Jim Bradley, Minister

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PARAMETERS LISTING SYSTEM
(PALIS)

Drinking Water Section
Water Resources Branch

March 1989

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HANDBOOK FOR THE PARAMETERS LISTING SYSTEM (PALIS)

INTRODUCTION

The parameters listing system (PALIS) consists of a Handbook and a listing of parameters, along with their corresponding guidelines, which can be applied to drinking water (PALIS SYSTEM PARAMETER REPORT). Guidelines from a number of different organizations and/or agencies have been provided, where they are available.

The handbook has been compiled to:-

a) explain the formatting and nomenclature used in the listings

b) provide guidance in the use of the system and define some precautions which are necessary.

The guidelines (or objectives or standards) from additional agencies may be added in the future as appropriate, and it is the intention to update this listing as expeditiously as possible when new information is available.

Users may wish to employ this document in conjunction with the Parameter Reference File of the Drinking Water Surveillance Program. The Parameter Reference File is a catalogue of properties, uses and treatment alternatives for chemicals associated with drinking water.

In addition, Appendix 1 provides background information on the procedures used in setting limits for substances in drinking water; this information is useful in understanding levels of risk and also explains why limits for a given substance may differ from agency to agency. Appendix 2 provides some specific information on the mechanism for the development of Ontario Drinking Water Objectives.

THE PARAMETERS LISTING SYSTEM

The Parameters Listing System (PALIS) is a catalogue of known guidelines applicable to drinking water. Each chemical is listed with the regulating agency, type of water, guideline values, type and status and reference material from which the guidelines were extracted. Guidelines may be health related or pertain to the aesthetic quality of drinking water.

A guideline value represents the level (a concentration or a number) of a constituent that ensures an aesthetically pleasing water and does not result in any significant risk to the health of the consumer over a lifetime. The guideline values describe a quality of water that is acceptable for lifelong consumption; therefore short term deviations above the guideline values do not necessarily mean that the water is unsuitable for consumption. The amount and duration that any guideline value can be exceeded without affecting public health depends on the specific substance involved.

GENERAL INFORMATION

The user of the system should be familiar with the information provided in the "Guide to the Use of PALIS", to ensure that the guidelines are used with an understanding of their correct application.

When an Ontario Drinking Water Objective (ODWO) is exceeded the steps outlined in the "Ontario Drinking Water Objectives" (ISBN 0-7743-8985-0) published in 1984 will be taken.

When another agency's guideline value is exceeded this should be a signal (i) to investigate the cause, with a possible view to taking remedial action; (ii) to consult the surveillance and public health agencies for advice on suitable action. Recommendations would be made taking into account the intake of the substance from sources other than drinking water (for chemical constituents), the likelihood of adverse effects and the practicability of remedial measures.

When using the PALIS information system it is important that reference be made to the information provided so that the limitations of each limit are recognized and applied in the correct circumstances with the right qualifications.

In the absence of Ontario Drinking Water Objectives and/or Canadian Drinking Water Objectives the most appropriate limits for use would be those developed specifically for drinking water from EPA and WHO.

In the case of an emergency spill situation when the duration of the exposure is expected to be short term it is probable that the EPA health advisories are most appropriate; this is what they are designed for.

The term "ambient" tends to have a slightly different meaning dependant upon the agency. If "ambient" limits are to be used, reference should be made to the actual definition of the limits and their application given under the "LIMIT" section beginning on page x.

Where it is possible to do so, the risk levels associated with the limits should be stated, and these may vary from agency to agency.

Some of the limits listed are legally enforceable by the controlling agency; where information on enforceability was available, it is provided under the "LIMITS" section.

The limits established by the agencies have been derived from the best information currently available; however, the development of objectives is an on-going process. Scientific knowledge of the complex interrelationships that determine water quality continue to increase as does the understanding of the physiological effects of the substances present in water. Also, man continues to introduce new chemical substances into the environment which may contaminate water supplies. It will therefore be necessary to continually revise the established limits as new and more significant data becomes available.

GUIDE TO THE USE OF PALIS

The following headings are used in the system:

CHEMICAL

Because of the manner by which computers sort, chemicals prefixed with a number eg. 2,4,5-T are sorted by number first and then alphabetically. This will apply to those chemicals identified in normal usage by this nomencalture. To facilitate location of chemicals existing as isomers, chemical isomers will be listed by the name of the chemical followed by the numbers denoting the isomer eg. dinitrotoluene(2,4). The Chemical Abstracts Service Registry Numbers (CAS#) are listed with every chemical where available. These are unique numerical identifiers assigned to each chemical substance as it is registered. It has no chemical significance but is simply a machine-checkable number. The CAS# is a concise and unique means of substance identification which is independent of the many systems of chemical nomenclature.

The chemicals are normally cited by the name under which they were listed in the original reference document. If a chemical name can not be found in the parameter report it may be listed under an "alias". At the end of the parameter report is an alias report that lists the "fullname" of the chemical on the parameter list along with aliases (other names) by which the chemical may be known.

AGENCY

1. MOE
   The Ontario Ministry of the Environment.

   Ontario Drinking Water Objectives (ODWO) are published by the Ministry of the Environment (MOE) and generally are based on the Canadian Drinking Water Guidelines. Interim guidelines may also be proposed from time to time (see also Appendix 2).

2. FLORIDA ST.
   The State of Florida, USA.

   This state issued the "State of Florida Drinking Water Regulations, Public Drinking Water Systems, DER 1984".

3. CALIFORNIA ST. DHS
   The State of California, USA, Department of Health Services.

   This state agency published recommended Action Levels for substances in drinking water.

4. WHO
   The World Health Organization.

   The organization published "Guidelines for Drinking Water Quality, Geneva 1984". The WHO suggests guideline values and tentative guideline values.

5. H&W
   Health and Welfare, Canada.

   Guidelines for Canadian Drinking Water Quality are prepared by the Federal-Provincial Sub-Committee on Drinking Water of the Federal-Provincial Advisory Committee on Environmental and Occupational Health and published by authority of the Minister of National Health and Welfare.

   Local conditions may necessitate modification of some of the recommended values by provincial agencies.

6. EEC
   The European Economic Community.

   The EEC published its "Drinking Water Directive" in 1980.

7. EPA
   United States Environmental Protection Agency.

   EPA provides drinking water regulations, proposed limits and health advisories applicable to drinking water and ambient water quality criteria.

8. NAS
   The United States National Academy of Sciences.

   This is a scientific advisory body that provides EPA with regular scientific guidance on contaminants in drinking water.

9. USSR
   The Union of Soviet Socialist Republic.

   Maximum Permissable Concentrations (MPC) for chemical substances existing in natural water or used as additives in the process of water treatment have been developed. These concentrations should not exceed the toxicological and organoleptic requirements of the USSR State Standard.

10. MOL
    The Ontario Ministry of Labour.

    This Ministry may supply guidelines to MOE when circumstances necessitate that an "approved" guideline be established for those compounds for which no Ontario Drinking Water Objective yet exists. Advice may be sought from the MOL on the appropriate guideline to use for a specific case in Ontario.

11. NEW YORK
The State of New York, USA.

This state has published drinking water standards, ambient water quality standards and ground water standards. These are intended to provide numerical limits for substances in waters used as a potable water supply.

12. NEW JERSEY
The State of New Jersey, USA.

This state's Department of Environmental Protection has a comprehensive classification system which is used as an effective tool for optimizing ground water protection efforts, guidelines for levels of certain contaminants appropriate to the various ground water classifications are part of the process. Maps that are prepared on the basis of the classification system can be used to guide activities such as the development of standards for water supply, land use management, source controls and remedial action.

13. NIOSH
The United States National Institute for Occupational Safety and Health.

This organization has published guidelines for several organic chemicals in Drinking Water and Health volume 4, 1982.

14. HAWAII
The State of Hawaii, USA.

The Hawaii State Office of Environmental Quality Control has published Action Levels for several pesticides; these appeared in the American Water Works Association Journal (JAWWA.79 August 1987).

15. NACA
The United States National Agricultural Chemicals Association.

This organization has released a document which suggests a method regulatory officials can use to evaluate groundwater contamination.

16. AWWA
The American Water Works Association.

This association has published emergency limits for some chemical pollutants in OPFLOW, volume 9, number 3, March 1983.

CATEGORY

The following category designations for water are used for this listing system:

DW
Drinking water limits are for application to drinking waters, for most agencies they apply to drinking water at the consumers tap.

AMBIENT
Ambient water limits are applied to surface waters which may be used as a source of drinking water. The definition of "ambient" varies from agency to agency and reference should be made to the "LIMIT" section (page x) where the definition of each ambient limit is provided.

GW
Ground water is water that is held in the soil and ultimately will be used as a potable water supply, agricultural water or for the replenishment of surface waters. The states of New Jersey and New York have set limits which apply to such waters.

LIMIT

The following more fully explains the types of limits as well as some of the background information which relates to their applicability to drinking waters. It is important to recognize, given the differing methods used by agencies, and their varying legislative approaches, that each limit is usually associated with a particular level of risk or has been developed employing different uncertainty factors. For example, EPA's ambient water quality guidelines for carcinogens are given for a risk level of $1x10^{-6}$, whereas WHO's drinking water guideline values for these substances are associated with a risk of $1x10^{-5}$. Where it is possible to do so, the actual risk level associated with the limits is given in the PALIS listing. In many instances, these data are not readily available. As previously stated all drinking water limits are set to protect the consumer from significant health risk upon consumption of drinking water over a lifetime.

1. AL

"Action Limit" for drinking water supplies in the State of California; when such limits are exceeded the need for some action (which might include resampling, investigation of source and remediation) is indicated.

2. AO

"Aesthetic Objectives" set by Health and Welfare, Canada apply to certain substances or characteristics of drinking water which can affect its acceptance by consumers or interfere with good water supply practices.

3. ASL

"Action Step Levels" have been established by the New York State Department of Health to provide guidance in responding to organic chemical concerns at public water systems.

a/ ASL1 if met or is exceeded prompts the use of that water source to be discontinued and initiates other appropriate action steps. A response to identify and verify the problem, develop a course of action and describe how a resolution to the problem will be tracked must be initiated (as per PWS 159).

b/ ASL2 if met or exceeded prompts notification of the Bureau of Public Water Supply Protection and initiation of a response as per ASL1.

4. AWQC

The "Ambient Water Quality Criteria" are set by EPA in the USA and are designed to ensure that surface waters used as a source of drinking water and from which fish are eaten contain no level of chemical that can be construed as hazardous to human health. Chemicals may bio-accumulate or become concentrated in fish flesh and because this must be accounted for, the maximum allowable limits for chemicals in ambient waters may actually be lower than drinking water guidelines. AWQC reported by EPA, assumes a daily consumption by a 70 kg person from the same body of water to be 2 litres of water and 6.5 gm fish, over a lifetime. The criteria for known carcinogens are based on a risk level of $1x10^{-6}$ and are noted as such with a "**".

5. AWQS

"Ambient Water Quality Standards" set by the State of New York are the basis of effluent limitations for use in state "Pollutant Discharge Elimination System" permits. Waters used as a source of drinking water, if subjected to approved disinfection treatment, with additional treatment if necessary to remove naturally present impurities, will meet NYS drinking water standards. The AWQS limits are classified as human health related, aesthetic or chemical correlation. Chemical correlations are used for substances for which there are not sufficient data or studies carried out and are based on the relationship of that substance to structurally similar chemicals which have sufficient human health effects, animal toxicological data and aesthetic thresholds on which to base standards.

6. DWEL

A "Drinking Water Equivalent Level" set by EPA is defined as the medium-specific exposure which is interpreted to be protective for health effects not involving carcinogenicity over a lifetime of exposure. They are interpreted as lifetime Health Advisories when carcinogenicity is not suspected.

7. ELLTC

"Emergency Limits for Long-term Consumption" have been developed by health experts convened by the AWWA to assist water purveyors specifically for emergency situations where the impact on drinking water supplies is expected to be long-term (over a period of days, months, years).

8. ELSTC

"Emergency Limits for Short-term Consumption" have been developed by health experts convened by AWWA to assist water purveyors specifically for short-term emergencies ranging up to 3 days. Such limits could be used in situations such as a discrete spill of a chemical into a river which is only expected to impact drinking water supplies for a short time period.

9. GL

A "Guideline Level" is a concentration in drinking water of a given substance which should not ideally be exceeded. Guideline levels are intended for use by members of the European Economic Community as a basis for the development of their own standards.

10. GV

"Guideline Values" for drinking water quality are intended for use by countries as a basis for the development of standards, which, if properly implemented, will ensure the safety of drinking water supplies. The compilation of these guidelines covered a period of three years and involved the active participation of nearly 30 WHO Member states, scores of scientists and meetings of ten task groups.

For a number of organic substances that are carcinogens or suspected carcinogens guideline values have been recommended based on a linear, multi-stage extrapolation model which assumes that there is a finite risk from any exposure, however small, and that the risk is proportional to the dose. The guideline values are based upon the selection of an acceptable risk of less than 1 additional case of cancer per 100,000 ($1x10^{-5}$) population assuming a daily consumption of 2 litres of drinking water by a 70 kg man. The "acceptable" risk of 1 in 100,000 per lifetime was arbitrarily selected by WHO. The uncertainties involved in this approach are significant and are at least about two orders of magnitude ie. the true values could be between one tenth and ten times the calculated values (see also Appendix 1).

11.GW

A simplistic aquifer classification system based on total dissolved solids has been put into place as one of the factors that is considered in the setting of effluent limitations. It is used on a site-specific basis as one of the factors that determine permit limits.

a/ GW1

Class GW1 applies only to the Central Pine Barrens ground water. The limit ensures water that shall be suitable for potable water supply, agricultural water, and continual replenishment of surface waters to maintain the existing quantity and quality.

b/ GW2

Class GW2 applies to ground water having a natural total dissolved solid concentration of 500 mg/l or less. It shall be suitable for potable, industrial or agricultural water supply after conventional treatment for hardness, pH, iron, manganese and chlorination.

c/ GW3

Class GW3 is for ground water having a natural total dissolved solid concentration between 500 and 10000 mg/l. It shall be suitable for conversion to fresh potable water or other reasonable beneficial uses.

12.GWQS

"Ground Water Quality Standards" for the state of New York are for waters used as a source of potable water. These ground waters are found in the saturated zone of unconsolidated deposits and consolidated rock or bed-rock.

13.HA

"Health Advisories" set by EPA are intended to provide useful information in the setting of control priorities in cases where contamination occurs and may be provided on a case-by-case basis in emergency situations such as spills and accidents. They are not legally enforceable standards and are not issued as an official regulation.

a/ HA 1C

One day health advisory for a 10 kg child assuming he consumes 1 litre of water per day.

b/ HA 10C

Ten day health advisory for a 10 kg child assuming he consumes 1 litre of water a day.

c/ HALT C

Longer term health advisory (approximately 7 years, or 10% of an individuals lifetime) for a 10 kg child assuming the child consumes 1 litre of water per day.

d/ HALT A

Longer term health advisory (approximately 7 years, or 10% of an individuals lifetime) for a 70 kg adult assuming the adult consumes 2 litres of water per day.

e/ HA LIFE

Lifetime health advisory for a 70 kg adult assuming all exposure to the substance is from drinking water. In the March 31, 1987 EPA report on Health Advisories HA Life is quoted as a DWEL (Drinking Water Equivalent Level).

f/ HA LIFE A

Lifetime health advisory for a 70 kg adult assuming that 20% of the exposure to the substance is from drinking water and adjusting for additional uncertainty if the substance is a potential carcinogen.

14.HGL

"Health Guidance Levels" for pesticides are suggested by the US National Agricultural Chemical Association to evaluate ground water contamination. The lifetime chronic exposure level can be derived by multiplying by ten the acceptable daily intake.

15.IDWG

The "Interim Drinking Water Guideline" limit is provided by Health and Welfare Canada from their toxicological data to meet specific needs of the Province of Ontario when no applicable guidelines are available.

16.IMAC

The "Interim Maximum Acceptable Concentration" is used by Ontario and Health and Welfare, Canada to describe limits for substances of current concern with no known chronic effects in mammals and for which there are no established MAC's. Although toxicological, epidemiological and health data are available for such substances the data are subject to public and scientific debate before agreement on an MAC. The IMAC will generally be a conservative value subject to change as more precise information becomes available.

17. LTAL

The "Long-term Action Level" developed by the State of Hawaii is based on a lifetime risk of cancer as 1 chance in 100,000. A plan will be implemented to reduce the level if it persists for more than several months.

18. LTG

The "Long-term Goal" developed by the State of Hawaii is based on a lifetime risk of cancer as 1 chance in 1,000,000. A plan will be developed to reduce the level if it persists for prolonged periods.

19. MAC

The "Maximum Acceptable Concentration" is used in Ontario and by Health and Welfare, Canada for limits applied to substances above which there are known or suspected adverse health effects. MACs from Health and Welfare Canada are not enforceable unless promulgated as such by the appropriate Provincial or Federal agency. MACs from Ontario can be made legally enforceable under the provisions of the Ontario Water Resources Act.

20. MADC

The European Economic Community provides "Maximum Admissable Concentrations"; these are concentrations below which substances in drinking water cannot, in the course of continuous ingestion, cause, or directly or indirectly result in any adverse health effects to a statistically representative sampling of the population. MADCs are intended for use by members of the EEC as a basis for the development of their own standards.

21. MCL

The EPA defines its "Maximum Contaminant Level" as a lifetime limit at the lowest practicable level of a substance representing a potential hazard to humans in order to minimize the amount of a toxicant contributed by water, particularly when other sources such as milk, food or air are known to represent the major exposure to man. These are legally enforceable and take into account occurrence, relative source contribution factors, treatment technology, monitoring capability and costs in addition to health effects.

22. MCLG

EPA provides a recommended "MCL health goal" which will be defined as the level at which no adverse health effects can be expected to occur. The MCLGs are not legally enforceable but represent the ideal level from the public health perspective. The MCLGs do not accept any degree of risk, hence some MCLGs may be zero if the EPA accepts the hypothesis that any exposure to carcinogens is not safe.

23. MDC

The "Maximum Desirable Concentration" is a limit used in Ontario for substances which when present at higher concentrations are either aesthetically objectionable to an appreciable number of the population or may interfere with good water quality control practices.

24. MPC

The USSR State Committee on Standards approved and brought into force "Maximum Permissable Concentrations" to provide for safe drinking water in respect of epidemic, chemical and organoleptic properties.

25. SG

"Special Guidelines" may be provided by the Ontario Ministry of Labour when no other guidelines are available and inadequate toxicological data exist to proceed to full health-based objectives. Special guidelines are specific to individual cases and are provided only after consultation with scientific experts.

26. SMCL

The "Secondary Maximum Contaminant Level" carries the same definition as the MCL but is not legally enforceable.

27. SNAEL

"Suggested No-Adverse Effect Levels" are similar to health advisories. They provide useful information in the setting of control priorities in cases where contamination occurs and may be provided on a case-by-case basis in emergency situations such as spills and accidents.

28. SNARL

The "Suggested No-Adverse Response Level" is the level of a contaminant in drinking water at which adverse health effects would not be anticipated. A margin of safety is factored in so as to protect the most sensitive members of the general population. Developed by NAS, SNARLS are calculated for a 70 kg adult. In the USA, SNARLs may or may not lead ultimately to the issuance of national standards or MCLs. The latter must take into account occurrence, relative source contribution factors, treatment technology, monitoring capability and costs in addition to health effects. SNARLs are offered as advice to regional and state environmental and health officials, local public officials and water treatment facility personnel who are responsible for the protection of public health when dealing with specific contamination situations.

a/ SNARL 1

A "Suggested No-Adverse Response Level 1" is the level of a contaminant in drinking water at which adverse health effects would not be anticipated for 24 hours.

b/ SNARL 7

A "Suggested No-Adverse Response Level 7" is the level of a contaminant in drinking water at which adverse health effects would not be anticipated for seven days.

c/ SNARL CHR

The "Chronic Suggested No-Adverse Response Level" is used for potential carcinogens where exposure is for more than 7 days; concentrations correspond to a one in one million cancer risk ($1x10^{-6}$ risk).

d/ SNARL CHR*

The "Chronic Suggested No-Adverse Response Level-20%" is the same as SNARL-CHR but assumes that 20% of the acceptable daily intake is from water.

29.STAL

The "Short-Term Action Level" if exceeded initiates a complete shut-down or implementation of a plan to reduce levels within 24 hours, in the State of Hawaii.

30.TGV

A "Tentative Guideline Value" is recommended by WHO in some cases, when, although the carcinogenicity data does not justify a full guideline value, the compounds are considered to have important health implications when present in drinking water. The tentative values are, nevertheless, based on the available health-related data, if additional evidence cannot be obtained, the tentative level in the future may be withdrawn. Tentative guideline values are derived using the multi-stage model even though the selected chemicals do not reveal significant carcinogenic properties. Consequently the tentative values display a greater degree of uncertainty than those derived for the guideline values.

LTYPE

The "limit type" signifies the type of limit that is listed.

H
"H"ealth limits apply to certain substances that are known or suspected to have adverse health effects.

A
"A"esthetic limits apply to certain substances or conditions, the presence of which in excess of the limit does not present a risk to human health, but may render the water unpalatable or otherwise unacceptable to the consumer.

C
"C"hemical correlation limits are based on the relationship of that substance to structurally similar chemicals which have sufficient human health effects data, animal toxicological data and aesthetic thresholds on which to base standards. The chemicals must have similar functional groups and potential metabolic and toxicologic pathways.

STATUS

This indicates the actual "status" of the limit.

S
"S"et indicates that the limit is established and applied by the regulatory agency

T
"T"entative indicates that the limit has been developed but is awaiting public and scientific approval

P
"P"roposed indicates that the limit has been developed and is still under scrutiny before being adopted by the proposing agency.

UOM

The "Unit of Measure" is provided for each of the limits. The unit used is that quoted in the original documentation. The units of measure are shown in Table 1 immediately following the PALIS SYSTEM PARAMETER REPORT, footnotes on p.74.

REFCODE

The "reference code" indicates the specific document from which the guideline/limit was quoted. In some instances, the documents were received directly from the agencies concerned; in others, the information was published in a journal or other publication;

as full a reference as possible has been given. All original documents from which PALIS was derived are on file with the Drinking Water Section, Water Resources Branch.

The PALIS database contains an abbreviated reference file. The full reference file report is reproduced in Table 2 which immediately follows Table 1 on p.75.

```
                       #######  PALIS SYSTEM PARAMETER REPORT---05/12/88  #######
                       ----------------------------------------------------------

       CHEMICAL
       --------
CAS#        AGENCY              CATEGORY            LIMIT           LTYPE  STATUS         VALUE  UOM         REFCODE
----        ------              --------            -----           -----  ------         -----  ---         -------
       (4-CHLORO-O-TOLOXY)ACETIC ACID
94-74-6     EPA                 DW                  HA LIFE         H      S             18.000  UG/L             27
                                                    HA LIFE A       H      S              3.600  UG/L             27
                                                    HA1 C           H      S               .100  MG/L             27
                                                    HA10 C          H      S               .100  MG/L             27
                                                    HALT A          H      S               .350  MG/L             27
                                                    HALT C          H      S               .100  MG/L             27
                                                    SNAEL           H      S               .440  UG/L             10
            NEW YORK            GW                  GWQS            H      S               .440  UG/L             16
--------------------------------------------------------------------------------------------------------------------
       1-HYDROXYETHYLIDENE-1,1-DIPHOSPH
2809-21-4   NEW YORK            AMBIENT             AWQS            D      P             50.000  UG/L             16
--------------------------------------------------------------------------------------------------------------------
       2,4,5-T
93-76-5     EPA                 DW                  HA LIFE         H      S               .105  MG/L             27
                                                    HA LIFE A       H      S               .021  MG/L             27
                                                    HA1 C           H      S               .800  MG/L             27
                                                    HA10 C          H      S               .800  MG/L             27
                                                    HALT A          H      S              1.050  MG/L             27
                                                    HALT C          H      S               .300  MG/L             27
                                                    SNAEL           H      S               .035  MG/L             10
            H&W                 DW                  MAC             H      S               .280  MG/L              5
            NEW YORK            GW                  GWQS            H      S             35.000  UG/L             16
--------------------------------------------------------------------------------------------------------------------
       2,4,5-TP
93-72-1     EPA                 AMBIENT             AWQC            H      S             10.000  UG/L              9
                                DW                  HA LIFE         H      S            260.000  UG/L              7
                                                    HA LIFE A       H      S             52.000  UG/L              7
                                                    HA1 C           H      S            200.000  UG/L              7
                                                    HA10 C          H      S            200.000  UG/L              7
                                                    HALT C          H      S             70.000  UG/L              7
                                                    MCL             H      S               .010  MG/L             28
                                                    MCLG            H      P               .052  MG/L              8
                                                    SNAEL           H      S               .260  UG/L             10
            FLORIDA ST.         DW                  MCL             H      S               .010  MG/L              2
            MOE                 DW                  MAC             H      S               .010  MG/L              1
            NEW YORK            AMBIENT             AWQS            H      S             10.000  UG/L             16
                                DW                  MCL             H      S               .010  MG/L             25
                                GW                  GWQS            H      S               .260  UG/L             16
--------------------------------------------------------------------------------------------------------------------
       2,4-D
94-75-7     AWWA                DW                  ELLTC           H      P               .100  MG/L             23
```

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                    #######   PALIS SYSTEM PARAMETER REPORT---05/12/88   #######
                     ---------------------------------------------------------

        CHEMICAL
        --------
CAS#          AGENCY              CATEGORY            LIMIT           LTYPE  STATUS        VALUE  UOM        REFCODE
----          ------              --------            -----           -----  ------        -----  ---        -------
        2,4-D
94-75-7       AWWA                DW                  ELSTC           H      P             2.000  MG/L            23
              EPA                 AMBIENT             AWQC            H      S           100.000  UG/L             9
                                  DW                  HA LIFE         H      S           350.000  UG/L             7
                                                      HA LIFE A       H      S            70.000  UG/L             7
                                                      HA1 C           H      S         1,100.000  UG/L             7
                                                      HA10 C          H      S           300.000  UG/L             7
                                                      MCL             H      S              .100  MG/L            28
                                                      MCLG            H      P              .070  MG/L             8
                                                      SNAEL           H      S             4.400  UG/L            10
              FLORIDA ST.         DW                  MCL             H      S              .100  MG/L             2
              H&W                 DW                  MAC             H      S              .100  MG/L             5
              MOE                 DW                  MAC             H      S              .100  MG/L             1
              NACA                GW                  HGL             H      P             1.250  MG/L            22
              NEW YORK            AMBIENT             AWQS            H      S           100.000  UG/L            16
                                  DW                  MCL             H      S              .100  MG/L            25
                                  GW                  GWQS            H      S             4.400  UG/L            16
              WHO                 DW                  GV              H      S           100.000  UG/L             4
------------------------------------------------------------------------------------------------------------------------
        2,4-DICHLOROPHENOXYBUTYRIC ACID
              H&W                 DW                  IMAC            H      S              .018  MG/L            17
------------------------------------------------------------------------------------------------------------------------
        3-CHLORO-1,2-PROPANEDIOL
96-24-2       USSR                DW                  MPC             A      S              .700  MG/L            12
------------------------------------------------------------------------------------------------------------------------
        ACENAPHTHENE
83-32-9       NEW YORK            AMBIENT             AWQS            A      S            20.000  UG/L            16
------------------------------------------------------------------------------------------------------------------------
        ACEPHATE
              NACA                GW                  HGL             H      P              .250  MG/L            22
------------------------------------------------------------------------------------------------------------------------
        ACETALDEHYDE
75-07-0       USSR                DW                  MPC             A      S              .200  MG/L            12
------------------------------------------------------------------------------------------------------------------------
        ACETONE
67-64-1       MOL                 DW                  SG              A      P             1.000  MG/L            15
------------------------------------------------------------------------------------------------------------------------
        ACETONE CYANOHYDRIN
75-86-5       USSR                DW                  MPC             H      S              .001  MG/L            12
------------------------------------------------------------------------------------------------------------------------
        ACETOPHENONE
98-86-2       USSR                DW                  MPC             H      S              .100  MG/L            12
```

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                    #######   PALIS SYSTEM PARAMETER REPORT---05/12/88   #######
                      ----------------------------------------------------------

        CHEMICAL
        --------
CAS#           AGENCY                CATEGORY              LIMIT             LTYPE STATUS        VALUE UOM     REFCODE
----           ------                --------              -----             ----- ------        ----- ---     -------
        ACETOPHOS
               USSR                  DW                    MPC               A     S              .030 MG/L         12
----------------------------------------------------------------------------------------------------------------------
        ACIFLUORFEN
5094-66-6      EPA                   DW                    HA LIFE           H     S              .440 MG/L         27
                                                           HA LIFE A         H     S             9.000 UG/L         27
                                                           HA1 C             H     S             2.000 MG/L         27
                                                           HA10 C            H     S             2.000 MG/L         27
                                                           HALT A            H     S              .440 MG/L         27
                                                           HALT C            H     S              .130 MG/L         27
----------------------------------------------------------------------------------------------------------------------
        ACROLEIN
107-02-8       EPA                   AMBIENT               AWQC              H     S           320.000 UG/L          9
----------------------------------------------------------------------------------------------------------------------
        ACRYLAMIDE
79-06-1        EPA                   DW                    DWEL              H     S              .007 MG/L          7
                                                           HA1 C             H     S             1.500 MG/L          7
                                                           HA10 C            H     S              .300 MG/L          7
                                                           HALT A            H     S              .070 MG/L          7
                                                           HALT C            H     S              .020 MG/L          7
                                                           MCLG              H     P              .000 MG/L          8
----------------------------------------------------------------------------------------------------------------------
        ACRYLIC ACID
79-10-7        USSR                  DW                    MPC               H     S              .500 MG/L         12
----------------------------------------------------------------------------------------------------------------------
        ACRYLONITRILE
107-13-1       EPA                   AMBIENT               AWQC              H     S              .058 UG/L **       9
               USSR                  DW                    MPC               H     S             2.000 MG/L         12
----------------------------------------------------------------------------------------------------------------------
        ADIPIC ACID DINITRILE
               USSR                  DW                    MPC               H     S              .100 MG/L         12
----------------------------------------------------------------------------------------------------------------------
        ALACHLOR
15972-60-8     EPA                   DW                    DWEL              H     S              .350 MG/L          7
                                                           HA1 C             H     S              .100 MG/L          7
                                                           HA10 C            H     S              .100 MG/L          7
                                                           MCLG              H     P              .000 MG/L          8
                                                           SNAEL             H     S              .035 MG/L         10
               NEW YORK              GW                    GWQS              H     S            35.000 UG/L         16
----------------------------------------------------------------------------------------------------------------------
        ALDICARB
116-06-3       CALIFORNIA ST. DHS    DW                    AL                H     S            10.000 UG/L          3
```

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                              #######   PALIS SYSTEM PARAMETER REPORT---05/12/88   #######
                                --------------------------------------------------------


       CHEMICAL
       --------
CAS#          AGENCY                CATEGORY              LIMIT            LTYPE  STATUS          VALUE  UOM       REFCODE
----          ------                --------              -----            -----  ------          -----  ---       -------
       ALDICARB
116-06-3      EPA                   DW                    HA LIFE          H      S              42.000  UG/L            7
                                                          HA LIFE A        H      S               9.000  UG/L            7
                                                          HA1 C            H      S              12.000  UG/L            7
                                                          HA10 C           H      S              12.000  UG/L            7
                                                          HALT A           H      S              42.000  UG/L            7
                                                          HALT C           H      S              12.000  UG/L            7
                                                          SNAEL            H      S                .350  UG/L           10
              H&W                   DW                    MAC              H      S                .009  MG/L            5
              NACA                  GW                    HGL              H      P                .030  MG/L           22
              NEW YORK              AMBIENT               AWQS             H      S               7.000  UG/L           16
                                    DW                    ASL1             H      S               7.000  UG/L           26
                                                          ASL2             H      S               3.000  UG/L           26
                                    GW                    GWQS             H      S                .350  UG/L           16
----------------------------------------------------------------------------------------------------------------------------
       ALDICARB(+SULFOXIDE AND SULFONE)
              EPA                   DW                    MCLG             H      P                .009  MG/L            8
----------------------------------------------------------------------------------------------------------------------------
       ALDRIN
309-00-2      AWWA                  DW                    ELLTC            H      P                .032  MG/L           23
                                                          ELSTC            H      P                .050  MG/L           23
              CALIFORNIA ST. DHS    DW                    AL               H      S                .050  UG/L            3
              EPA                   AMBIENT               AWQC             H      S                .074  NG/L **         9
              NAS                   DW                    SNARL CHR        H      S                .107  UG/L **        11
              USSR                  DW                    MPC              A      S                .002  MG/L           12
----------------------------------------------------------------------------------------------------------------------------
       ALDRIN AND DIELDRIN
309-00-2+D    H&W                   DW                    MAC              H      S                .700  UG/L            5
              MOE                   DW                    MAC              H      S                .700  UG/L            1
              NEW JERSEY            GW                    GW1              A      S                .003  UG/L           21
                                                          GW2              A      S                .003  UG/L           21
                                                          GW3              A      S                .003  UG/L           21
              WHO                   DW                    GV               H      S                .030  UG/L            4
----------------------------------------------------------------------------------------------------------------------------
       ALIPHATIC AMINES C10-C16
              USSR                  DW                    MPC              A      S                .040  MG/L           12
----------------------------------------------------------------------------------------------------------------------------
       ALIPHATIC AMINES C16-C20
              USSR                  DW                    MPC              A      S                .030  MG/L           12
----------------------------------------------------------------------------------------------------------------------------
       ALIPHATIC AMINES C7-C9
              USSR                  DW                    MPC              A      S                .100  MG/L           12
```

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                                  #######   PALIS SYSTEM PARAMETER REPORT---05/12/88   #######
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        CHEMICAL
        --------
  CAS#         AGENCY               CATEGORY              LIMIT           LTYPE  STATUS          VALUE  UOM       REFCODE
  ----         ------               --------              -----           -----  ------          -----  ---       -------
        ALKYL BENZENESULFONATES
               USSR                 DW                    MPC             A      S                .500  MG/L          12
-------------------------------------------------------------------------------------------------------------------------
        ALKYL SULFATES
               USSR                 DW                    MPC             A      S                .500  MG/L          12
-------------------------------------------------------------------------------------------------------------------------
        ALKYL SULFONATES
               USSR                 DW                    MPC             A      S                .500  MG/L          12
-------------------------------------------------------------------------------------------------------------------------
        ALUMINUM
  7429-90-5    EEC                  DW                    GL              A      S                .050  MG/L           6
                                                          MADC            A      S                .200  MG/L           6
               USSR                 DW                    MPC             H      S                .500  MG/L          12
               WHO                  DW                    GV              A      S                .200  MG/L           4
-------------------------------------------------------------------------------------------------------------------------
        AMETRYN
  834-12-8     EPA                  DW                    HA LIFE         H      S                .300  MG/L          27
                                                          HA LIFE A       H      S                .060  MG/L          27
                                                          HA1 C           H      S               8.600  MG/L          27
                                                          HA10 C          H      S               8.600  MG/L          27
                                                          HALT A          H      S               3.000  MG/L          27
                                                          HALT C          H      S                .860  MG/L          27
               NACA                 GW                    HGL             H      P                .125  MG/L          22
-------------------------------------------------------------------------------------------------------------------------
        AMIBEN
  133-90-4     EPA                  DW                    SNAEL           H      S                .087  MG/L          10
               NEW YORK             GW                    GWQS            H      S              87.500  UG/L          16
-------------------------------------------------------------------------------------------------------------------------
        AMINOCRESOL
               NEW YORK             AMBIENT               AWQS            A      S               1.000  UG/L          16
-------------------------------------------------------------------------------------------------------------------------
        AMINOPHENOL(ORTHO)
  95-55-6      USSR                 DW                    MPC             A      S                .010  MG/L          12
-------------------------------------------------------------------------------------------------------------------------
        AMINOPHENOL(PARA)
  123-30-8     USSR                 DW                    MPC             A      S                .050  MG/L          12
-------------------------------------------------------------------------------------------------------------------------
        AMMONIA
  7664-41-7    NEW JERSEY           GW                    GW1             A      S                .500  UG/L          21
                                                          GW2             A      S                .500  UG/L          21
                                                          GW3             A      S                .500  UG/L          21
               NEW YORK             AMBIENT               AWQS            H      S           2,000.000  UG/L          16
```

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                      #######   PALIS SYSTEM PARAMETER REPORT---11/18/88   #######
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       CHEMICAL
       --------
CAS#        AGENCY                 CATEGORY             LIMIT            LTYPE  STATUS            VALUE  UOM         REFCODE
----        ------                 --------             -----            -----  ------            -----  ---         -------
       AMMONIA
7664-41-7   USSR                   DW                   MPC              A      S                 2.000  MG/L             12
--------------------------------------------------------------------------------------------------------------------------
       AMMONIUM
            EEC                    DW                   GL               A      S                  .050  MG/L              6
                                                        MADC             A      S                  .500  MG/L              6
--------------------------------------------------------------------------------------------------------------------------
       AMMONIUM PERCHLORATE
7790-98-9   USSR                   DW                   MPC              H      S                 5.000  MG/L             12
--------------------------------------------------------------------------------------------------------------------------
       AMMONIUM SULFAMATE
7773-06-0   EPA                    DW                   HA LIFE          H      S                 7.500  MG/L             27
                                                        HA LIFE A        H      S                 1.500  MG/L             27
                                                        HA1 C            H      S                21.400  MG/L             27
                                                        HA10 C           H      S                21.400  MG/L             27
                                                        HALT A           H      S                75.000  MG/L             27
                                                        HALT C           H      S                21.400  MG/L             27
--------------------------------------------------------------------------------------------------------------------------
       ANILINE
62-53-3     USSR                   DW                   MPC              H      S                 1.100  MG/L             12
--------------------------------------------------------------------------------------------------------------------------
       ANISOL
            USSR                   DW                   MPC              H      S                  .050  MG/L             12
--------------------------------------------------------------------------------------------------------------------------
       ANTIMONY
7440-36-0   EEC                    DW                   MADC             H      S                10.000  UG/L              6
            EPA                    AMBIENT              AWQC             H      S               146.000  UG/L              9
            USSR                   DW                   MPC              H      S                  .050  MG/L             12
--------------------------------------------------------------------------------------------------------------------------
       ARSENIC
7440-38-2   EEC                    DW                   MADC             H      S                50.000  UG/L              6
            EPA                    AMBIENT              AWQC             H      S                 2.200  NG/L **           9
                                   DW                   HA LIFE          H      S                50.000  UG/L              7
                                                        HA LIFE A        H      S                50.000  UG/L              7
                                                        HA1 C            H      S                50.000  UG/L              7
                                                        HA10 C           H      S                50.000  UG/L              7
                                                        HALT A           H      S                50.000  UG/L              7
                                                        HALT C           H      S                50.000  UG/L              7
                                                        MCL              H      S                  .050  MG/L             28
                                                        MCLG             H      P                  .050  MG/L              8
            FLORIDA ST.            DW                   MCL              H      S                  .050  MG/L              2
            H&W                    DW                   MAC              H      S                  .050  MG/L              5
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PALIS SYSTEM PARAMETER REPORT---05/12/88

CAS#	AGENCY	CATEGORY	LIMIT	LTYPE	STATUS	VALUE	UOM	REFCODE
ARSENIC								
7440-38-2	MOE	DW	MAC	H	S	.050	MG/L	1
	NEW YORK	AMBIENT	AWQS	H	S	50.000	UG/L	16
		DW	MCL	H	S	.050	MG/L	25
		GW	GWQS	H	S	.025	MG/L	16
	USSR	DW	MPC	H	S	.050	MG/L	12
	WHO	DW	GV	H	S	.050	MG/L	4
ARSENIC AND COMPOUNDS								
7440-38-2+	NEW JERSEY	GW	GW1	A	S	.050	MG/L	21
			GW2	A	S	.050	MG/L	21
			GW3	A	S	.050	MG/L	21
ASBESTOS								
1332-21-4	EPA	AMBIENT	AWQC	H	S	30,000.000	F/L **	9
		DW	MCLG	H	P	7,100,000.000	F/L	8
ATRAZINE								
1912-24-9	EPA	DW	HA LIFE	H	S	.123	MG/L	27
			HA LIFE A	H	S	3.000	UG/L	27
			HA1 C	H	S	.100	MG/L	27
			HA10 C	H	S	.100	MG/L	27
			HALT A	H	S	.123	MG/L	27
			HALT C	H	S	.035	MG/L	27
			SNAEL	H	S	7.500	UG/L	10
	H&W	DW	IMAC	H	S	.060	MG/L	5
	NACA	GW	HGL	H	P	.375	MG/L	22
	NAS	DW	SNARL CHR*	H	S	150.000	UG/L	11
	NEW YORK	DW	ASL1	H	S	25.000	UG/L	26
			ASL2	H	S	5.000	UG/L	26
		GW	GWQS	H	S	7.500	UG/L	16
AZINPHOSMETHYL								
86-50-0	EPA	DW	SNAEL	H	S	4.400	UG/L	10
	H&W	DW	MAC	H	S	.020	MG/L	5
	NACA	GW	HGL	H	P	.250	MG/L	22
	NEW YORK	GW	GWQS	H	S	4.400	UG/L	16
BARIUM								
7440-39-3	EEC	DW	GL	A	S	100.000	UG/L	6
	EPA	AMBIENT	AWQC	H	S	1.000	MG/L	9
		DW	HA LIFE	H	S	1,800.000	UG/L	7

CHEMICAL CAS#	AGENCY	CATEGORY	LIMIT	LTYPE	STATUS	VALUE	UOM	REFCODE
BARIUM								
7440-39-3	EPA	DW	HA LIFE A	H	S	1,500.000	UG/L	7
			HA1 C	H	S	.510	MG/L	7
			HA10 C	H	S	.510	MG/L	7
			HALT C	H	S	.510	MG/L	7
			MCL	H	S	1.000	MG/L	28
			MCLG	H	P	1.500	MG/L	8
	FLORIDA ST.	DW	MCL	H	S	1.000	MG/L	2
	H&W	DW	MAC	H	S	1.000	MG/L	5
	MOE	DW	MAC	H	S	1.000	MG/L	1
	NEW JERSEY	GW	GW1	A	S	1.000	UG/L	21
			GW2	A	S	1.000	UG/L	21
			GW3	A	S	1.000	UG/L	21
	NEW YORK	AMBIENT	AWQS	H	S	1,000.000	UG/L	16
		DW	MCL	H	S	1.000	MG/L	25
		GW	GWQS	H	S	1.000	MG/L	16
	USSR	DW	MPC	A	S	4.000	MG/L	12
BENDIOCARB								
22781-23-3	H&W	DW	MAC	H	S	.040	MG/L	5
BENEFIN								
	EPA	DW	SNAEL	H	S	35.000	UG/L	10
	NEW YORK	GW	GWQS	H	S	35.000	UG/L	16
BENTAZON								
25057-89-0	EPA	DW	HA LIFE	H	S	87.500	UG/L	27
			HA LIFE A	H	S	17.500	UG/L	27
			HA1 C	H	S	.250	MG/L	27
			HA10 C	H	S	.250	MG/L	27
			HALT A	H	S	.875	MG/L	27
			HALT C	H	S	.250	MG/L	27
	NACA	GW	HGL	H	P	11.750	MG/L	22
BENZENE								
71-43-2	CALIFORNIA ST. DHS	DW	AL	H	S	.700	UG/L	3
	EPA	AMBIENT	AWQC	H	S	.660	UG/L **	9
		DW	HA1 C	H	S	235.000	UG/L	7
			HA10 C	H	S	235.000	UG/L	7
			MCL	H	S	5.000	UG/L	20
			MCLG	H	S	.000	UG/L	8
	FLORIDA ST.	DW	MCL	H	S	1.000	UG/L	2

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                              #######   PALIS SYSTEM PARAMETER REPORT---05/12/88   #######
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       CHEMICAL
       --------
CAS#          AGENCY                CATEGORY              LIMIT            LTYPE  STATUS           VALUE  UOM          REFCODE
----          ------                --------              -----            -----  ------           -----  ---          -------
       BENZENE
71-43-2       H&W                   DW                    MAC              H      S                 .005  MG/L             5
              NAS                   DW                    SNARL 7          H      S              250.000  UG/L            11
              NIOSH                 DW                    SNARL 7          H      S                 .250  MG/L            24
              USSR                  DW                    MPC              H      S                 .500  MG/L            12
              WHO                   DW                    GV               H      S               10.000  UG/L             4
..............................................................................................................................
       BENZIDINE
92-87-5       EPA                   AMBIENT               AWQC             H      S                 .120  NG/L **          9
              NEW JERSEY            GW                    GW1              A      S                 .100  UG/L            21
                                                          GW2              A      S                 .100  UG/L            21
                                                          GW3              A      S                 .100  UG/L            21
..............................................................................................................................
       BENZINE
              USSR                  DW                    MPC              A      S                 .100  MG/L            12
..............................................................................................................................
       BENZO(A)PYRENE
50-32-8       H&W                   DW                    MAC              H      S                 .010  UG/L             5
              NEW YORK              AMBIENT               AWQS             H      P                 .200  UG/L            16
              WHO                   DW                    GV               H      S                 .010  UG/L             4
..............................................................................................................................
       BERYLLIUM
7440-41-7     AWWA                  DW                    ELLTC            H      P                 .000  MG/L            23
                                                          ELSTC            H      P                 .100  MG/L            23
              EPA                   AMBIENT               AWQC             H      S                6.800  NG/L **          9
              USSR                  DW                    MPC              H      S                 .200  UG/L            12
..............................................................................................................................
       BHC(ALPHA)
319-84-6      CALIFORNIA ST. DHS    DW                    AL               H      S                 .700  UG/L             3
              EPA                   AMBIENT               AWQC             H      S                9.200  NG/L **          9
..............................................................................................................................
       BHC(BETA)
              CALIFORNIA ST. DHS    DW                    AL               H      S                 .300  UG/L             3
              EPA                   AMBIENT               AWQC             H      S               16.300  NG/L **          9
..............................................................................................................................
       BHC(TECHNICAL)
              EPA                   AMBIENT               AWQC             H      S               12.300  NG/L **          9
..............................................................................................................................
       BIS-(2-ETHYLHEXYL)PHTHALATE
117-81-7      EPA                   AMBIENT               AWQC             H      S               15.000  MG/L             9
              NAS                   DW                    SNARL CHR*       H      S            4,200.000  UG/L            11
              USSR                  DW                    MPC              A      S                1.000  UG/L            12
              #######   PALIS SYSTEM PARAMETER REPORT---05/12/88   #######
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      CHEMICAL
      --------
CAS#         AGENCY                CATEGORY              LIMIT          LTYPE  STATUS           VALUE  UOM        REFCODE
----         ------                --------              -----          -----  ------           -----  ---        -------
      BOD(5 DAY)
             NEW JERSEY            GW                    GW1              A      S              3.000  MG/L            21
--------------------------------------------------------------------------------------------------------------------------
      BORON
7440-42-8    AWWA                  DW                    ELLTC            H      P              1.000  MG/L            23
                                                         ELSTC            H      P             25.000  MG/L            23
             EEC                   DW                    GL               A      S          1,000.000  UG/L             6
             H&W                   DW                    MAC              H      S              5.000  MG/L             5
             MOE                   DW                    MAC              H      S              5.000  MG/L             1
--------------------------------------------------------------------------------------------------------------------------
      BROMACIL
314-40-9     EPA                   DW                    HA LIFE          H      S              4.200  MG/L            27
                                                         HA LIFE A        H      S               .080  MG/L            27
                                                         HA1 C            H      S              4.600  MG/L            27
                                                         HA10 C           H      S              4.600  MG/L            27
                                                         HALT A           H      S              8.700  MG/L            27
                                                         HALT C           H      S              2.500  MG/L            27
                                                         SNAEL            H      S              4.400  UG/L            10
             NACA                  GW                    HGL              H      P               .125  MG/L            22
             NEW YORK              GW                    GWQS             H      S              4.400  UG/L            16
--------------------------------------------------------------------------------------------------------------------------
      BROMOXYNIL
1689-84-5    H&W                   DW                    IMAC             H      S               .005  MG/L             5
             NACA                  GW                    HGL              H      P               .025  MG/L            22
--------------------------------------------------------------------------------------------------------------------------
      BUTACHLOR
             EPA                   DW                    SNAEL            H      S              3.500  UG/L            10
             NEW YORK              GW                    GWQS             H      S              3.500  UG/L            16
--------------------------------------------------------------------------------------------------------------------------
      BUTYL ACRYLATE
141-32-2     USSR                  DW                    MPC              A      S               .015  MG/L            12
--------------------------------------------------------------------------------------------------------------------------
      BUTYL BENZENE
             USSR                  DW                    MPC              A      S               .100  MG/L            12
--------------------------------------------------------------------------------------------------------------------------
      BUTYL XANTHATE
             USSR                  DW                    MPC              A      S               .001  MG/L            12
--------------------------------------------------------------------------------------------------------------------------
      BUTYLATE
2008-41-5    EPA                   DW                    HA LIFE          H      S              2.450  MG/L            27
                                                         HA LIFE A        H      S               .050  MG/L            27
                                                         HA1 C            H      S              2.400  MG/L            27
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                                   #######  PALIS SYSTEM PARAMETER REPORT---05/12/88  #######
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        CHEMICAL
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CAS#           AGENCY                   CATEGORY                 LIMIT              LTYPE  STATUS         VALUE  UOM       REFCODE
----           ------                   --------                 -----              -----  ------         -----  ---       -------
        BUTYLATE
2008-41-5      EPA                      DW                       HA10 C             H      S              2.400  MG/L           27
...................................................................................................................................
        BUTYLENE
               USSR                     DW                       MPC                A      S               .200  MG/L           12
...................................................................................................................................
        CADMIUM
7440-43-9      EEC                      DW                       MADC               H      S              5.000  UG/L            6
               EPA                      AMBIENT                  AWQC               H      S             10.000  UG/L            9
                                        DW                       HA LIFE            H      S             18.000  UG/L            7
                                                                 HA LIFE A          H      S              5.000  UG/L            7
                                                                 HA1 C              H      S             43.000  UG/L            7
                                                                 HA10 C             H      S             43.000  UG/L            7
                                                                 HALT A             H      S             18.000  UG/L            7
                                                                 HALT C             H      S              5.000  UG/L            7
                                                                 MCL                H      S               .010  MG/L           28
                                                                 MCLG               H      P               .005  MG/L            8
               FLORIDA ST.              DW                       MCL                H      S               .010  MG/L            2
               H&W                      DW                       MAC                H      S               .005  MG/L            5
               MOE                      DW                       MAC                H      S               .005  MG/L            1
               NEW YORK                 AMBIENT                  AWQS               H      S             10.000  UG/L           16
                                        DW                       MCL                H      S               .010  MG/L           25
                                        GW                       GWQS               H      S               .010  MG/L           16
               USSR                     DW                       MPC                H      S               .010  MG/L           12
               WHO                      DW                       GV                 H      S               .005  MG/L            4
...................................................................................................................................
        CADMIUM AND COMPOUNDS
7440-43-9*     NEW JERSEY               GW                       GW2                A      S               .010  MG/L           21
                                                                 GW3                A      S               .010  MG/L           21
...................................................................................................................................
        CALCIUM
7440-70-2      EEC                      DW                       GL                 A      S            100.000  MG/L            6
...................................................................................................................................
        CALCIUM CARBONATE
471-34-1       WHO                      DW                       GV                 A      S            500.000  MG/L            4
...................................................................................................................................
        CAPTAN
133-06-2       CALIFORNIA ST. DHS       DW                       AL                 H      S               .350  MG/L            3
               EPA                      DW                       SNAEL              H      S               .017  MG/L           10
               NEW YORK                 GW                       GWQS               H      S             17.500  UG/L           16
...................................................................................................................................
        CARBARYL
63-25-2        EPA                      DW                       HA LIFE            H      S              3.500  MG/L           27
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PALIS SYSTEM PARAMETER REPORT---05/12/88

CHEMICAL CAS#	AGENCY	CATEGORY	LIMIT	LTYPE	STATUS	VALUE	UOM	REFCODE
CARBARYL								
63-25-2	EPA	DW	HA LIFE A	H	S	.700	MG/L	27
			HA1 C	H	S	1.000	MG/L	27
			HA10 C	H	S	1.000	MG/L	27
			HALT C	H	S	1.000	MG/L	27
			SNAEL	H	S	.029	MG/L	10
	H&W	DW	MAC	H	S	.090	MG/L	5
	MOE	DW	MAC	H	S	.070	MG/L	1
	NACA	GW	HGL	H	P	1.000	MG/L	22
	NEW YORK	GW	GWQS	H	S	28.700	UG/L	16
	USSR	DW	MPC	A	S	.100	MG/L	12
CARBINE								
	USSR	DW	MPC	A	S	.030	MG/L	12
CARBOFURAN								
1563-66-2	EPA	DW	HA LIFE	H	S	180.000	UG/L	7
			HA LIFE A	H	S	36.000	UG/L	7
			HA1 C	H	S	50.000	UG/L	7
			HA10 C	H	S	50.000	UG/L	7
			HALT A	H	S	180.000	UG/L	7
			HALT C	H	S	50.000	UG/L	7
			MCLG	H	P	.036	MG/L	8
	H&W	DW	MAC	H	S	.090	MG/L	5
	NACA	GW	HGL	H	P	.050	MG/L	22
	NEW YORK	AMBIENT	AWQS	H	S	15.000	UG/L	16
		DW	ASL1	H	S	15.000	UG/L	26
			ASL2	H	S	3.000	UG/L	26
CARBON DISULFIDE								
75-15-0	USSR	DW	MPC	A	S	1.000	MG/L	12
CARBON TETRACHLORIDE								
56-23-5	CALIFORNIA ST. DHS	DW	AL	H	S	5.000	UG/L	3
	EPA	AMBIENT	AWQC	H	S	.400	UG/L **	9
		DW	DWEL	H	S	25.000	UG/L	7
			HA1 C	H	S	4,000.000	UG/L	7
			HA10 C	H	S	160.000	UG/L	7
			HALT A	H	S	250.000	UG/L	7
			HALT C	H	S	71.000	UG/L	7
			MCL	H	S	5.000	UG/L	20
			MCLG	H	S	.000	UG/L	8

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               #######   PALIS SYSTEM PARAMETER REPORT---05/12/88   #######
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        CHEMICAL
        --------
CAS#         AGENCY                CATEGORY            LIMIT            LTYPE  STATUS          VALUE  UOM        REFCODE
----         ------                --------            -----            -----  ------          -----  ---        -------
        CARBON TETRACHLORIDE
56-23-5      FLORIDA ST.           DW                  MCL                H      S              3.000  UG/L             2
             H&W                   DW                  MAC                H      S               .005  MG/L             5
             NAS                   DW                  SNARL 7            H      S          2,000.000  UG/L            11
                                                       SNARL CHR          H      S              6.670  UG/L **         11
             USSR                  DW                  MPC                H      S               .300  MG/L            12
             WHO                   DW                  TGV                H      S              3.000  UG/L             4
-----------------------------------------------------------------------------------------------------------------------
        CARBOPHENOTHION
786-19-6     CALIFORNIA ST DHS     DW                  AL                 H      S               .007  MG/L             3
-----------------------------------------------------------------------------------------------------------------------
        CARBOPHOS
             USSR                  DW                  MPC                A      S               .050  MG/L            12
-----------------------------------------------------------------------------------------------------------------------
        CARBOXIN
5234-68-4    EPA                   DW                  HA LIFE            H      S              3.500  MG/L            27
                                                       HA LIFE A          H      S               .700  MG/L            27
                                                       HA1 C              H      S              1.000  MG/L            27
                                                       HA10 C             H      S              1.000  MG/L            27
                                                       HALT A             H      S              3.500  MG/L            27
                                                       HALT C             H      S              1.000  MG/L            27
-----------------------------------------------------------------------------------------------------------------------
        CELATOX
             USSR                  DW                  MPC                A      S               .500  MG/L            12
-----------------------------------------------------------------------------------------------------------------------
        CESIUM-137
             H&W                   DW                  MAC                H      S             50.000  BECQ/L           5
             MOE                   DW                  MAC                H      S             50.000  BECQ/L           1
-----------------------------------------------------------------------------------------------------------------------
        CHINOMETHIONATE
             NACA                  GW                  HGL                H      P               .300  MG/L            22
-----------------------------------------------------------------------------------------------------------------------
        CHLORAMBEN
             EPA                   DW                  HA LIFE            H      S               .525  MG/L            27
                                                       HA LIFE A          H      S               .105  MG/L            27
                                                       HA1 C              H      S              2.500  MG/L            27
                                                       HA10 C             H      S              2.500  MG/L            27
                                                       HALT A             H      S               .525  MG/L            27
                                                       HALT C             H      S               .150  MG/L            27
             NACA                  GW                  HGL                H      P              5.000  MG/L            22
-----------------------------------------------------------------------------------------------------------------------
        CHLORANIL
118-75-2     USSR                  DW                  MPC                A      S               .010  MG/L            12
```

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                              #######   PALIS SYSTEM PARAMETER REPORT---05/12/88   #######
                              -------------------------------------------------------------

         CHEMICAL
         --------
CAS#          AGENCY                CATEGORY             LIMIT            LTYPE  STATUS          VALUE  UOM          REFCODE
----          ------                --------             -----            -----  ------          -----  ---          -------
         CHLORDANE
57-74-9       AWWA                  DW                   ELLTC            H      P                .003  MG/L              23
                                                         ELSTC            H      P                .060  MG/L              23
              CALIFORNIA ST. DHS    DW                   AL               H      S                .055  UG/L               3
              EPA                   AMBIENT              AWQC             H      S                .460  NG/L **            9
                                    DW                   DWEL             H      S               2.000  UG/L #             7
                                                         HA1 C            H      S              63.000  UG/L               7
                                                         HA10 C           H      S              63.000  UG/L               7
                                                         MCLG             H      P                .000  MG/L               8
              H&W                   DW                   MAC              H      S                .007  MG/L               5
              MOE                   DW                   MAC              H      S                .007  MG/L               1
              NEW YORK              GW                   GWQS             H      S                .100  UG/L              16
              WHO                   DW                   GV               H      S                .300  UG/L               4
--------------------------------------------------------------------------------------------------------------------------------
         CHLORIDE
              EPA                   DW                   SMCL             A      S             250.000  MG/L              28
              H&W                   DW                   AO               A      S             250.000  MG/L               5
              MOE                   DW                   MDC              A      S             250.000  MG/L               1
              NEW JERSEY            GW                   GW1              A      S              10.000  MG/L              21
                                                         GW2              A      S             250.000  MG/L              21
              NEW YORK              AMBIENT              AWQS             H      S         250,000.000  UG/L              16
                                    DW                   MCL              H      S             250.000  MG/L              25
                                    GW                   GWQS             H      S             250.000  MG/L              16
              WHO                   DW                   GV               A      S             250.000  MG/L               4
--------------------------------------------------------------------------------------------------------------------------------
         CHLORIDES
              EEC                   DW                   GL               A      S              25.000  MG/L               6
--------------------------------------------------------------------------------------------------------------------------------
         CHLORINATED BENZENES
              EPA                   AMBIENT              AWQC             H      S             488.000  UG/L               9
--------------------------------------------------------------------------------------------------------------------------------
         CHLOROANILINE(PARA)
106-47-8      USSR                  DW                   MPC              H      S                .200  MG/L              12
--------------------------------------------------------------------------------------------------------------------------------
         CHLOROBENZENE
108-90-7      EPA                   AMBIENT              AWQC             H      S             488.000  UG/L               9
                                    DW                   HA LIFE          H      S           1,510.000  UG/L               7
                                                         HA LIFE A        H      S             300.000  UG/L               7
                                                         HA1 C            H      S           4,300.000  UG/L               7
                                                         HA10 C           H      S           4,300.000  UG/L               7
                                                         HALT A           H      S          15,000.000  UG/L               7
                                                         HALT C           H      S           4,300.000  UG/L               7
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                         #######  PALIS SYSTEM PARAMETER REPORT---05/12/88  #######
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      CHEMICAL
      --------
CAS#          AGENCY                CATEGORY              LIMIT            LTYPE  STATUS          VALUE  UOM        REFCODE
----          ------                --------              -----            -----  ------          -----  ---        -------
      CHLOROBENZENE
108-90-7      EPA                   DW                    MCLG               H      P              .060  MG/L             8
              NEW YORK              AMBIENT               AWQS               A      S            20.000  UG/L            16
              USSR                  DW                    MPC                H      S              .020  MG/L            12
.............................................................................................................................
      CHLOROETHYL ETHER (BIS-2)
              EPA                   AMBIENT               AWQC               H      S              .030  UG/L **          9
.............................................................................................................................
      CHLOROFORM
              EPA                   DW                    MCL                H      S           100.000  UG/L            11
.............................................................................................................................
67-66-3       EPA                   AMBIENT               AWQC               H      S              .190  UG/L **          9
                                    DW                    MCL                H      S           100.000  UG/L *          11
              NAS                   DW                    SNARL 7            H      S         3,200.000  UG/L            11
                                                          SNARL CHR          H      S             3.120  UG/L **         11
              NEW YORK              AMBIENT               AWQS               H      S              .200  UG/L            16
                                    GW                    GWQS               H      S           100.000  UG/L            16
              WHO                   DW                    GV                 H      S            30.000  UG/L             4
.............................................................................................................................
      CHLOROHEPTANOIC ACID
              USSR                  DW                    MPC                A      S              .050  MG/L            12
.............................................................................................................................
      CHLOROISOPROPYL(BIS-2)
              EPA                   AMBIENT               AWQC               H      S              .035  MG/L             9
.............................................................................................................................
      CHLOROMETHYL ETHER (BIS)
              EPA                   AMBIENT               AWQC               H      S              .004  PG/L **          9
.............................................................................................................................
      CHLORONAPHTHALENE(2)
91-58-7       NEW YORK              AMBIENT               AWQS               C      S            10.000  UG/L            16
.............................................................................................................................
      CHLORONITROCYCLOHEXANE
              USSR                  DW                    MPC                A      S              .005  MG/L            12
.............................................................................................................................
      CHLORONONANOIC ACID
              USSR                  DW                    MPC                A      S              .300  MG/L            12
.............................................................................................................................
      CHLOROPHOS
              USSR                  DW                    MPC                A      S              .050  MG/L            12
.............................................................................................................................
      CHLOROPRENE
              USSR                  DW                    MPC                A      S              .100  MG/L            12
```

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                    #######   PALIS SYSTEM PARAMETER REPORT---05/12/88   #######
                      -----------------------------------------------------------


      CHEMICAL
      --------
 CAS#        AGENCY               CATEGORY          LIMIT            LTYPE  STATUS          VALUE  UOM       REFCODE
 ----        ------               --------          -----            -----  ------          -----  ---       -------
      CHLOROPROPHAM
             CALIFORNIA ST DHS    DW                AL               H      S                .350  MG/L            3
-----------------------------------------------------------------------------------------------------------------------
      CHLOROTHALONIL
 1897-45-6   EPA                  DW                HA LIFE          H      S                .525  MG/L           27
                                                    HA1 C            H      S             250.000  UG/L           27
                                                    HA10 C           H      S             250.000  UG/L           27
                                                    HALT A           H      S                .525  MG/L           27
                                                    HALT C           H      S             150.000  UG/L           27
             NACA                 GW                HGL              H      P                .150  MG/L           22
-----------------------------------------------------------------------------------------------------------------------
      CHLOROUNDECANOIC ACID
             USSR                 DW                MPC              A      S                .100  MG/L           12
-----------------------------------------------------------------------------------------------------------------------
      CHLORPYRIFOS
             H&W                  DW                MAC              H      S                .090  MG/L            5
             NACA                 GW                HGL              H      P                .030  MG/L           22
-----------------------------------------------------------------------------------------------------------------------
      CHROMIUM
 7440-47-3   EEC                  DW                MADC             H      S              50.000  UG/L            6
             EPA                  DW                HA LIFE          H      S             170.000  UG/L            7
                                                    HA LIFE A        H      S             120.000  UG/L            7
                                                    HA1 C            H      S           1,400.000  UG/L            7
                                                    HA10 C           H      S           1,400.000  UG/L            7
                                                    HALT A           H      S             840.000  UG/L            7
                                                    HALT C           H      S             240.000  UG/L            7
                                                    MCL              H      S                .050  MG/L           28
                                                    MCLG             H      P                .120  MG/L            8
             FLORIDA ST.          DW                MCL              H      S                .050  MG/L            2
             H&W                  DW                MAC              H      S                .050  MG/L            5
             MOE                  DW                MAC              H      S                .050  MG/L            1
             NEW YORK             AMBIENT           AWQS             H      S              50.000  UG/L           16
                                  DW                MCL              H      S                .050  MG/L           25
             WHO                  DW                GV               H      S                .050  MG/L            4
-----------------------------------------------------------------------------------------------------------------------
      CHROMIUM (HEX)
 7440-47-3HEX EPA                 AMBIENT           AWQC             H      S              50.000  UG/L            9
             NEW YORK             AMBIENT           AWQS             H      P               7.200  UG/L           16
             USSR                 DW                MPC              A      S                .100  MG/L           12
                                                                     H      S                .100  MG/L           12
-----------------------------------------------------------------------------------------------------------------------
      CHROMIUM (HEX) AND COMPOUNDS
 7440-47-3+  NEW JERSEY           GW                GW2              A      S                .050  MG/L           21
```

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                              #######  PALIS SYSTEM PARAMETER REPORT---05/12/88  #######
                               ----------------------------------------------------------


       CHEMICAL
       --------
CAS#          AGENCY                 CATEGORY              LIMIT             LTYPE   STATUS           VALUE  UOM           REFCODE
----          ------                 --------              -----             -----   ------           -----  ---           -------
       CHROMIUM (HEX) AND COMPOUNDS
7440-47-3+    NEW JERSEY             GW                    GW3                 A       S               .050  MG/L               21
..................................................................................................................................
       CHROMIUM (TRI)
7440-47-3TRI  EPA                    AMBIENT               AWQC                H       S            170.000  MG/L                9
              USSR                   DW                    MPC                 A       S               .500  MG/L               12
..................................................................................................................................
       CHROMIUM(HEX)
              NEW YORK               GW                    GWQS                H       S               .050  MG/L               16
..................................................................................................................................
       CHS-2-1
              USSR                   DW                    MPC                 A       S             10.000  MG/L               12
..................................................................................................................................
       COBALT
7440-48-4     USSR                   DW                    MPC                 H       S              1.000  MG/L               12
..................................................................................................................................
       COLIFORMS
              EPA                    DW                    MCL                 H       S              1.000  /100ML             28
..................................................................................................................................
       COLOUR
              EEC                    DW                    GL                  A       S              1.000  MG/L                6
                                                           MADC                A       S             20.000  MG/L                6
              EPA                    DW                    SMCL                A       S             15.000  TCU                28
              H&W                    DW                    AO                  A       S             15.000  TCU                 5
              MOE                    DW                    MOC                 A       S              5.000  TCU                 1
              NEW YORK               DW                    MCL                 A       S             15.000  TCU                25
              WHO                    DW                    GV                  A       S             15.000  TCU                 4
..................................................................................................................................
       CONDUCTIVITY
              EEC                    DW                    GL                  A       S            400.000  US/CM               6
..................................................................................................................................
       COPPER
7440-50-8     EEC                    DW                    GL                  A       S            100.000  UG/L                6
              EPA                    DW                    MCLG                H       P              1.300  MG/L                8
                                                           SMCL                A       S              1.000  MG/L               28
              H&W                    DW                    AO                  A       S              1.000  MG/L                5
              MOE                    DW                    MOC                 A       S              1.000  MG/L                1
              NEW JERSEY             GW                    GW1                 A       S              1.000  MG/L               21
                                                           GW2                 A       S              1.000  MG/L               21
                                                           GW3                 A       S              1.000  MG/L               21
              NEW YORK               AMBIENT               AWQS                H       S            200.000  UG/L               16
                                     DW                    MCL                 A       S              1.000  MG/L               25
```

CHEMICAL

CAS#	AGENCY	CATEGORY	LIMIT	LTYPE	STATUS	VALUE	UOM	REFCODE
COPPER								
7440-50-8	NEW YORK	GW	GWQS	H	S	1.000	MG/L	16
	USSR	DW	MPC	A	S	.100	MG/L	12
	WHO	DW	GV	A	S	1.000	MG/L	4
CRESYL DITHIOPHOSPHATE								
	USSR	DW	MPC	A	S	.001	MG/L	12
CROTONITRILE								
	USSR	DW	MPC	H	S	.100	MG/L	12
CRUDE OIL (HIGH S)								
	USSR	DW	MPC	A	S	.100	MG/L	12
CRUDE OIL (OTHER)								
	USSR	DW	MPC	A	S	.300	MG/L	12
CYANAZINE								
21725-46-2	EPA	DW	HA LIFE	H	S	46.000	UG/L	27
			HA LIFE A	H	S	9.000	UG/L	27
			HA1 C	H	S	.100	MG/L	27
			HA10 C	H	S	.100	MG/L	27
			HALT A	H	S	46.000	UG/L	27
			HALT C	H	S	13.000	UG/L	27
	H&W	DW	IMAC	H	S	.010	MG/L	5
CYANIDE								
	AWWA	DW	ELLTC	H	P	.010	MG/L	23
			ELSTC	H	P	5.000	MG/L	23
	EPA	AMBIENT	AWQC	H	S	200.000	UG/L	9
		DW	HA LIFE	H	S	770.000	UG/L	7
			HA1 C	H	S	220.000	UG/L	7
			HA10 C	H	S	220.000	UG/L	7
			HALT A	H	S	770.000	UG/L	7
			HALT C	H	S	220.000	UG/L	7
	NEW JERSEY	GW	GW1	A	S	.200	MG/L	21
			GW2	A	S	.200	MG/L	21
			GW3	A	S	.200	MG/L	21
	NEW YORK	AMBIENT	AWQS	H	S	100.000	UG/L	16
		GW	GWQS	H	S	.200	MG/L	16
	USSR	DW	MPC	H	S	.100	MG/L	12
	WHO	DW	GV	H	S	.100	MG/L	4

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                                       #######  PALIS SYSTEM PARAMETER REPORT---05/12/88  #######
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          CHEMICAL
          --------
  CAS#            AGENCY                     CATEGORY                  LIMIT               LTYPE    STATUS               VALUE  UOM          REFCODE
  ----            ------                     --------                  -----               -----    ------               -----  ---          -------
          CYANIDE FREE
                  H&W                        DW                        MAC                 H        S                     .200  MG/L               5
                  MOE                        DW                        MAC                 H        S                     .200  MG/L               1
----------------------------------------------------------------------------------------------------------------------------------------------------
          CYANIDES
                  EEC                        DW                        MADC                H        S                   50.000  UG/L               6
                  USSR                       DW                        MPC                 H        S                     .100  MG/L              12
----------------------------------------------------------------------------------------------------------------------------------------------------
          CYANURIC ACID
  108-80-5        USSR                       DW                        MPC                 A        S                    6.000  MG/L              12
----------------------------------------------------------------------------------------------------------------------------------------------------
          CYCLOHEXANE
  110-82-7        USSR                       DW                        MPC                 H        S                     .100  MG/L              12
----------------------------------------------------------------------------------------------------------------------------------------------------
          CYCLOHEXANOL
  108-93-0        USSR                       DW                        MPC                 H        S                     .500  MG/L              12
----------------------------------------------------------------------------------------------------------------------------------------------------
          CYCLOHEXANONE
  5[illegible]2-42-1        USSR                       DW                        MPC                 H        S                     .200  MG/L              12
----------------------------------------------------------------------------------------------------------------------------------------------------
          CYCLOHEXANONE OXIME
                  USSR                       DW                        MPC                 H        S                    1.000  MG/L              12
----------------------------------------------------------------------------------------------------------------------------------------------------
          CYCLOHEXENE
  110-83-8        USSR                       DW                        MPC                 H        S                     .020  MG/L              12
----------------------------------------------------------------------------------------------------------------------------------------------------
          CYCLOHEXYLCHLORIDE
  542-18-7        USSR                       DW                        MPC                 A        S                     .050  MG/L              12
----------------------------------------------------------------------------------------------------------------------------------------------------
          CYCLONITE
  121-82-4        USSR                       DW                        MPC                 H        S                     .100  MG/L              12
----------------------------------------------------------------------------------------------------------------------------------------------------
          CYROMAZINE
                  NACA                       GW                        HGL                 H        P                     .075  MG/L              22
----------------------------------------------------------------------------------------------------------------------------------------------------
          DALAPON
  75-99-0         EPA                        DW                        MA LIFE             H        S                    2.800  MG/L              27
                                                                       MA LIFE A           H        S                     .560  MG/L              27
                                                                       MA1 C               H        S                    4.300  MG/L              27
                                                                       MA10 C              H        S                    4.300  MG/L              27
                                                                       MALT A              H        S                    2.800  MG/L              27
                                                                       MALT C              H        S                     .800  MG/L              27
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                        #######   PALIS SYSTEM PARAMETER REPORT---05/12/88   #######
                          ------------------------------------------------------------

      CHEMICAL
      --------
 CAS#        AGENCY             CATEGORY           LIMIT           LTYPE  STATUS          VALUE  UOM       REFCODE
 ----        ------             --------           -----           -----  ------          -----  ---       -------
      DALAPON
 75-99-0     USSR               DW                 MPC              A      S              2.000  MG/L           12
----------------------------------------------------------------------------------------------------------------------
      DBCP
 96-12-8     EPA                DW                 HA1 C            H      S               .200  MG/L            7
                                                   HA10 C           H      S               .050  MG/L            7
             HAWAII             GW                 LTAL             H      P            400.000  NG/L           19
                                                   LTG              H      P             40.000  NG/L           19
                                                   STAL             H      P          1,700.000  NG/L           19
----------------------------------------------------------------------------------------------------------------------
      DCPA
 1861-32-1   EPA                DW                 HA LIFE          H      S             17.500  MG/L           27
                                                   HA LIFE A        H      S              3.500  MG/L           27
                                                   HA1 C            H      S             75.000  MG/L           27
                                                   HA10 C           H      S             75.000  MG/L           27
                                                   HALT C           H      S              5.000  MG/L           27
             NACA               GW                 HGL              H      P              5.000  MG/L           22
----------------------------------------------------------------------------------------------------------------------
      DDD
             NEW YORK           AMBIENT            AWQS             H      S               .010  UG/L           16
----------------------------------------------------------------------------------------------------------------------
      DDE
             NEW YORK           AMBIENT            AWQS             H      S               .010  UG/L           16
----------------------------------------------------------------------------------------------------------------------
      DDT
 50-29-3     AWWA               DW                 ELLTC            H      P               .042  MG/L           23
                                                   ELSTC            H      P              1.400  MG/L           23
             EPA                AMBIENT            AWQC             H      S               .024  NG/L **         9
             H&W                DW                 MAC              H      S               .030  MG/L            5
             MOE                DW                 MAC              H      S               .030  MG/L            1
             NAS                DW                 SNARL CHR        H      S               .083  UG/L **        11
             NEW YORK           AMBIENT            AWQS             H      S               .010  UG/L           16
             USSR               DW                 MPC              H      S               .100  MG/L           12
             WHO                DW                 GV               H      S               .001  MG/L            4
----------------------------------------------------------------------------------------------------------------------
      DDT AND METABOLITES
 50-29-3+    NEW JERSEY         GW                 GW1              A      S               .001  UG/L           21
                                                   GW2              A      S               .001  UG/L           21
                                                   GW3              A      S               .001  UG/L           21
----------------------------------------------------------------------------------------------------------------------
      DEMETON
 8065-48-3   USSR               DW                 MPC              A      S               .010  MG/L           12
```

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                 #######  PALIS SYSTEM PARAMETER REPORT---05/12/88  #######
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      CHEMICAL
      --------
CAS#        AGENCY               CATEGORY             LIMIT           LTYPE  STATUS         VALUE  UOM      REFCODE
----        ------               --------             -----           -----  ------         -----  ---      -------
      DI(2-ETHYL HEXYL)
            EPA                  DW                   SNAEL             H      S             .210  MG/L          10
-------------------------------------------------------------------------------------------------------------------
      DI-2-ETHYLHEXYL PHTHALATE
            EPA                  AMBIENT              AWQC              H      S           15.000  MG/L           9
            NEW YORK             GW                   GWQS              H      S            4.200  MG/L          16
-------------------------------------------------------------------------------------------------------------------
      DI-ALLATE
2303-16-4   USSR                 DW                   MPC               A      S             .030  MG/L          12
-------------------------------------------------------------------------------------------------------------------
      DIAZINON
333-41-5    CALIFORNIA ST. DHS   DW                   AL                H      S           14.000  UG/L           3
            EPA                  DW                   HA LIFE           H      S             .003  MG/L          27
                                                      HA LIFE A         H      S             .630  UG/L          27
                                                      HA1 C             H      S             .020  MG/L          27
                                                      HA10 C            H      S             .020  MG/L          27
                                                      HALT A            H      S             .018  MG/L          27
                                                      HALT C            H      S             .005  MG/L          27
                                                      SNAEL             H      S             .700  UG/L          10
            H&W                  DW                   MAC               H      S             .020  MG/L           5
            MOE                  DW                   MAC               H      S             .014  MG/L           1
            NACA                 GW                   HGL               H      P             .020  MG/L          22
            NEW YORK             GW                   GWQS              H      S             .700  UG/L          16
-------------------------------------------------------------------------------------------------------------------
      DIBROMOCHLOROPROPANE
            CALIFORNIA ST. DHS   DW                   AL                H      S             .001  MG/L           3
            EPA                  DW                   MCLG              H      P             .000  MG/L           8
-------------------------------------------------------------------------------------------------------------------
      DIBUTYL PHTHALATE
84-74-2     EPA                  AMBIENT              AWQC              H      S           35.000  MG/L           9
                                 DW                   SNAEL             H      S           38.500  UG/L          10
-------------------------------------------------------------------------------------------------------------------
      DIBUTYL TIN CHLORIDE
            USSR                 DW                   MPC               H      S             .002  MG/L          12
-------------------------------------------------------------------------------------------------------------------
      DIBUTYLTIN DILAURATE
77-58-7     USSR                 DW                   MPC               H      S             .100  MG/L          12
-------------------------------------------------------------------------------------------------------------------
      DICAMBA
1918-00-9   EPA                  DW                   HA LIFE           H      S           46.000  UG/L          27
                                                      HA LIFE A         H      S            9.000  UG/L          27
                                                      HA1 C             H      S             .300  MG/L          27
```

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                                #######   PALIS SYSTEM PARAMETER REPORT---05/12/88   #######
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         CHEMICAL
         --------
  CAS#          AGENCY                CATEGORY               LIMIT            LTYPE  STATUS            VALUE UOM        REFCODE
  ----          ------                --------               -----            -----  ------            ----- ---        -------
         DICAMBA
  1918-00-9     EPA                   DW                     HA10 C           H      S                  .300 MG/L            27
                                                             HALT A           H      S                50.000 UG/L            27
                                                             HALT C           H      S                13.000 UG/L            27
                                                             SNAEL            H      S                  .440 UG/L            10
                H&W                   DW                     MAC              H      S                  .120 MG/L             5
                NEW YORK              GW                     GWQS             H      S                  .440 UG/L            16
-------------------------------------------------------------------------------------------------------------------------------
         DICHLONE
  117-80-6      USSR                  DW                     MPC              H      S                  .250 MG/L            12
-------------------------------------------------------------------------------------------------------------------------------
         DICHLOROANILINE(2,5)
  95-82-9       USSR                  DW                     MPC              A      S                  .050 MG/L            12
-------------------------------------------------------------------------------------------------------------------------------
         DICHLOROANILINE(3,4)
  95-76-1       USSR                  DW                     MPC              A      S                  .050 MG/L            12
-------------------------------------------------------------------------------------------------------------------------------
         DICHLOROBENZENE(1,2)
  95-50-1       CALIFORNIA ST. DHS    DW                     AL               A      S                10.000 UG/L             3
                                                                              H      S               130.000 UG/L             3
                EPA                   DW                     HA LIFE          H      S                 3.130 MG/L             7
                                                             HA LIFE A        H      S               620.000 UG/L             7
                                                             HA1 C            H      S                 8.930 MG/L             7
                                                             HA10 C           H      S                 8.930 MG/L             7
                                                             HALT A           H      S                31.250 MG/L             7
                                                             HALT C           H      S                 8.930 MG/L             7
                                                             MCLG             H      P                  .620 MG/L             8
                H&W                   DW                     AO               A      S                  .003 MG/L             5
                                                             MAC              H      S                  .200 MG/L             5
                USSR                  DW                     MPC              A      S                  .002 MG/L            12
-------------------------------------------------------------------------------------------------------------------------------
         DICHLOROBENZENE(1,3)
  541-73-1      CALIFORNIA ST. DHS    DW                     AL               A      S                20.000 UG/L             3
                                                                              H      S               130.000 UG/L             3
                EPA                   DW                     HA LIFE          H      S                 3.750 MG/L             7
                                                             HA LIFE A        H      S               620.000 UG/L             7
                                                             HA1 C            H      S                 8.930 MG/L             7
                                                             HA10 C           H      S                 8.930 MG/L             7
                                                             HALT A           H      S                31.250 MG/L             7
                                                             HALT C           H      S                 8.930 MG/L             7
                NEW YORK              AMBIENT                AWQS             H      S                20.000 UG/L            16
-------------------------------------------------------------------------------------------------------------------------------
         DICHLOROBENZENE(1,4)
  106-46-7      CALIFORNIA ST. DHS    DW                     AL               A      S                  .300 UG/L             3
```

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                         #######   PALIS SYSTEM PARAMETER REPORT---05/12/88   #######
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      CHEMICAL
      --------
CAS#        AGENCY              CATEGORY            LIMIT          LTYPE STATUS          VALUE UOM        REFCODE
----        ------              --------            -----          ----- ------          ----- ---        -------
      DICHLOROBENZENE(1,4)
106-46-7    CALIFORNIA ST. DHS  DW                  AL             H     S             130.000 UG/L             3
            EPA                 DW                  HA LIFE        H     S               3.750 MG/L             7
                                                    HA LIFE A      H     S                .075 MG/L             7
                                                    HA1 C          H     S              10.700 MG/L             7
                                                    HA10 C         H     S              10.700 MG/L             7
                                                    HALT A         H     S              37.500 MG/L             7
                                                    HALT C         H     S              10.700 MG/L             7
                                                    MCL            H     S              75.000 UG/L            20
                                                    MCLG           H     S             750.000 UG/L             8
            H&W                 DW                  AO             A     S                .001 MG/L             5
                                                    MAC            H     S                .005 MG/L             5
            NEW YORK            AMBIENT             AWQS           H     S              30.000 UG/L            16
            USSR                DW                  MPC            A     S                .002 MG/L            12
------------------------------------------------------------------------------------------------------------------
      DICHLOROBENZENES
            EPA                 AMBIENT             AWQC           H     S             400.000 UG/L             9
------------------------------------------------------------------------------------------------------------------
      DICHLOROBENZIDINE
            EPA                 AMBIENT             AWQC           H     S                .010 UG/L **          9
------------------------------------------------------------------------------------------------------------------
      DICHLOROBUTENE
            USSR                DW                  MPC            A     S                .050 MG/L            12
------------------------------------------------------------------------------------------------------------------
      DICHLOROCYCLOHEXANE
            USSR                DW                  MPC            A     S                .020 MG/L            12
------------------------------------------------------------------------------------------------------------------
      DICHLOROETHANE
            USSR                DW                  MPC            A     S               2.000 MG/L            12
------------------------------------------------------------------------------------------------------------------
      DICHLOROETHANE(1,2)
107-06-2    CALIFORNIA ST. DHS  DW                  AL             H     S               1.000 UG/L             3
            EPA                 AMBIENT             AWQC           H     S                .940 UG/L **          9
                                DW                  HA1 C          H     S             740.000 UG/L             7
                                                    HA10 C         H     S             740.000 UG/L             7
                                                    HALT A         H     S           2,600.000 UG/L             7
                                                    HALT C         H     S             740.000 UG/L             7
                                                    MCL            H     S               5.000 UG/L            20
                                                    MCLG           H     S                .000 UG/L             8
            FLORIDA ST.         DW                  MCL            H     S               3.000 UG/L             2
            NAS                 DW                  SNARL CHR      H     S               1.420 UG/L **         11
            NEW YORK            AMBIENT             AWQS           H     S                .800 UG/L            16
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                                #######   PALIS SYSTEM PARAMETER REPORT---05/12/88   #######
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         CHEMICAL
         --------
  CAS#          AGENCY                CATEGORY              LIMIT            LTYPE  STATUS            VALUE UOM       REFCODE
  ----          ------                --------              -----            -----  ------            ----- ---       -------
         DICHLOROETHANE(1,2)
  107-06-2      WHO                   DW                    GV               H      S             10.000 UG/L            4
-----------------------------------------------------------------------------------------------------------------------------
         DICHLOROETHYLENE(1,1)
  75-35-4       CALIFORNIA ST. DHS    DW                    AL               H      S               .100 UG/L            3
                EPA                   DW                    HA LIFE          H      S            350.000 UG/L            7
                                                            HA LIFE A        H      S              7.000 UG/L            7
                                                            HA1 C            H      S          2,000.000 UG/L            7
                                                            HA10 C           H      S          1,000.000 UG/L            7
                                                            HALT A           H      S          3,500.000 UG/L            7
                                                            HALT C           H      S          1,000.000 UG/L            7
                                                            MCL              H      S              7.000 UG/L           20
                                                            MCLG             H      S              7.000 UG/L            8
                WHO                   DW                    GV               H      S               .300 UG/L            4
-----------------------------------------------------------------------------------------------------------------------------
         DICHLOROETHYLENE(1,2-CIS)
  156-59-2      EPA                   DW                    HA LIFE          H      S               .350 MG/L            7
                                                            HA LIFE A        H      S             70.000 UG/L            7
                                                            HA1 C            H      S              4.000 MG/L            7
                                                            HA10 C           H      S              1.000 MG/L            7
                                                            HALT A           H      S              3.500 MG/L            7
                                                            HALT C           H      S              1.000 MG/L            7
                                                            MCLG             H      P               .070 MG/L            8
-----------------------------------------------------------------------------------------------------------------------------
         DICHLOROETHYLENE(1,2-TRANS)
  156-60-5      EPA                   DW                    HA LIFE          H      S            350.000 UG/L            7
                                                            HA LIFE A        H      S             70.000 UG/L            7
                                                            HA1 C            H      S         20,000.000 UG/L            7
                                                            HA10 C           H      S          1,430.000 UG/L            7
                                                            HALT A           H      S          5,000.000 UG/L            7
                                                            HALT C           H      S          1,430.000 UG/L            7
                                                            MCLG             H      P               .070 MG/L            8
-----------------------------------------------------------------------------------------------------------------------------
         DICHLOROETHYLENES
                EPA                   AMBIENT               AWQC             H      S               .033 UG/L **         9
-----------------------------------------------------------------------------------------------------------------------------
         DICHLOROHYDRIN
                USSR                  DW                    MPC              A      S              1.000 MG/L           12
-----------------------------------------------------------------------------------------------------------------------------
         DICHLOROPHENOL
                USSR                  DW                    MPC              A      S               .002 MG/L           12
-----------------------------------------------------------------------------------------------------------------------------
         DICHLOROPHENOL(2,4)
  120-83-2      EPA                   AMBIENT               AWQC             H      S              3.090 MG/L            9
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                                   #######  PALIS SYSTEM PARAMETER REPORT---05/12/88  #######
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          CHEMICAL
          --------
CAS#          AGENCY                CATEGORY             LIMIT            LTYPE  STATUS            VALUE  UOM        REFCODE
----          ------                --------             -----            -----  ------            -----  ---        -------
          DICHLOROPHENOL(2,4)
120-83-2      H&W                   DW                   AO                 A      S                .300  UG/L             5
                                                         MAC                H      S                .900  MG/L             5
              NEW YORK              AMBIENT              AWQS               A      S                .300  UG/L            16
.............................................................................................................................
          DICHLOROPROPANE(1,2)
78-87-5       CALIFORNIA ST. DHS    DW                   AL                 H      S              10.000  UG/L             3
              EPA                   DW                   HA10 C             H      S              90.000  UG/L             7
                                                         MCLG               H      P                .006  MG/L             8
.............................................................................................................................
          DICHLOROPROPENE
              EPA                   AMBIENT              AWQC               H      S              87.000  UG/L             9
.............................................................................................................................
          DICHLOROPROPENE(1,3)
542-75-6      EPA                   DW                   HA LIFE            H      S              11.000  UG/L            27
                                                         HA1 C              H      S              30.000  UG/L            27
                                                         HA10 C             H      S              30.000  UG/L            27
                                                         HALT A             H      S             105.000  UG/L            27
                                                         HALT C             H      S              30.000  UG/L            27
.............................................................................................................................
          DICHLOROVINYL DIMETHYL PHOSPHATE
              USSR                  DW                   MPC                A      S               1.000  MG/L            12
.............................................................................................................................
          DICLOFOP-METHYL
              H&W                   DW                   MAC                H      S                .009  MG/L             5
.............................................................................................................................
          DICYANODIAMIDE
461-58-5      USSR                  DW                   MPC                A      S              10.000  MG/L            12
.............................................................................................................................
          DIELDRIN
60-57-1       AWWA                  DW                   ELLTC              H      P                .017  MG/L            23
                                                         ELSTC              H      P                .050  MG/L            23
              CALIFORNIA ST. DHS    DW                   AL                 H      S                .050  UG/L             3
              EPA                   AMBIENT              AWQC               H      S                .071  MG/L **          9
                                    DW                   HA LIFE            H      S               1.750  UG/L            27
                                                         HA1 C              H      S                .500  UG/L            27
                                                         HA10 C             H      S                .500  UG/L            27
                                                         HALT C             H      S                .500  UG/L            27
              NAS                   DW                   SNARL CHR          H      S               3.840  MG/L            11
.............................................................................................................................
          DIETHANOLAMINE
111-42-2      USSR                  DW                   MPC                A      S                .800  MG/L            12
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                         #######   PALIS SYSTEM PARAMETER REPORT---05/12/88   #######
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       CHEMICAL
       --------
CAS#          AGENCY              CATEGORY            LIMIT           LTYPE STATUS          VALUE  UOM        REFCODE
----          ------              --------            -----           ----- ------          -----  ---        -------
       DIETHYL ETHER
60-29-7       MOL                 DW                  SG              A     P                .300  MG/L            15
              USSR                DW                  MPC             A     S                .300  MG/L            12
-------------------------------------------------------------------------------------------------------------------
       DIETHYL ETHER MALEATE
              USSR                DW                  MPC             H     S               1.000  MG/L            12
-------------------------------------------------------------------------------------------------------------------
       DIETHYL MERCURY
              USSR                DW                  MPC             H     S                .100  UG/L            12
-------------------------------------------------------------------------------------------------------------------
       DIETHYL PHOSPHORODITHOIC ACID
              USSR                DW                  MPC             A     S                .200  MG/L            12
-------------------------------------------------------------------------------------------------------------------
       DIETHYL PHTHALATE
84-66-2       EPA                 AMBIENT             AWQC            H     S             350.000  MG/L             9
-------------------------------------------------------------------------------------------------------------------
       DIETHYLAMINE
109-89-7      USSR                DW                  MPC             H     S               2.000  MG/L            12
-------------------------------------------------------------------------------------------------------------------
       DIETHYLENEGLYCOL
111-46-6      USSR                DW                  MPC             H     S               1.000  MG/L            12
-------------------------------------------------------------------------------------------------------------------
       DIETHYLTIN DICAPRYLATE
              USSR                DW                  MPC             H     S                .010  MG/L            12
-------------------------------------------------------------------------------------------------------------------
       DIISOBUTYLAMINE
              USSR                DW                  MPC             A     S                .070  MG/L            12
-------------------------------------------------------------------------------------------------------------------
       DIISOPROPYLAMINE
108-18-9      USSR                DW                  MPC             H     S                .500  MG/L            12
-------------------------------------------------------------------------------------------------------------------
       DIISOPROPYLBENZENE(PARA)
              USSR                DW                  MPC             H     S                .050  MG/L            12
-------------------------------------------------------------------------------------------------------------------
       DIKOTEX
              USSR                DW                  MPC             A     S                .250  MG/L            12
-------------------------------------------------------------------------------------------------------------------
       DIMETHOATE
60-51-5       CALIFORNIA ST. DHS  DW                  AL              H     S                .140  MG/L             3
              H&W                 DW                  IMAC            H     S                .020  MG/L             5
-------------------------------------------------------------------------------------------------------------------
       DIMETHRIN
67239-16-1    EPA                 DW                  HA LIFE         H     S              10.500  MG/L            27
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                    #######   PALIS SYSTEM PARAMETER REPORT---05/12/88   #######
                    ------------------------------------------------------------

        CHEMICAL
        --------
CAS#          AGENCY                CATEGORY            LIMIT            LTYPE  STATUS          VALUE  UOM          REFCODE
----          ------                --------            -----            -----  ------          -----  ---          -------
        DIMETHRIN
67239-16-1    EPA                   DW                  HA LIFE A        H      S               2.100  MG/L              27
                                                        HA1 C            H      S              12.000  MG/L              27
                                                        HA10 C           H      S              12.000  MG/L              27
                                                        HALT A           H      S              42.000  MG/L              27
                                                        HALT C           H      S              12.000  MG/L              27
-----------------------------------------------------------------------------------------------------------------------------
        DIMETHYL PHENOL(2,4)
105-67-9      CALIFORNIA ST. DHS    DW                  AL               H      S                .400  MG/L               3
-----------------------------------------------------------------------------------------------------------------------------
        DIMETHYL PHTHALATE
131-11-3      EPA                   AMBIENT             AWQC             H      S             313.000  MG/L               9
-----------------------------------------------------------------------------------------------------------------------------
        DIMETHYL TEREPHTHALATE
120-61-6      USSR                  DW                  MPC              A      S               1.500  MG/L              12
-----------------------------------------------------------------------------------------------------------------------------
        DIMETHYLAMINE
124-40-3      USSR                  DW                  MPC              H      S                .100  MG/L              12
-----------------------------------------------------------------------------------------------------------------------------
        DIMETHYLDIOXANE
              USSR                  DW                  MPC              H      S                .005  MG/L              12
-----------------------------------------------------------------------------------------------------------------------------
        DIMETHYLDITHIOCARBAMATE
              USSR                  DW                  MPC              H      S                .500  MG/L              12
-----------------------------------------------------------------------------------------------------------------------------
        DIMETHYLDITHIOPHOSPHORIC ACID
              USSR                  DW                  MPC              A      S                .100  MG/L              12
-----------------------------------------------------------------------------------------------------------------------------
        DIMETHYLPHENYLCARBINOL
              USSR                  DW                  MPC              H      S                .050  MG/L              12
-----------------------------------------------------------------------------------------------------------------------------
        DINITRO-O-CRESOL(2,4)
              EPA                   AMBIENT             AWQC             H      S              13.400  UG/L               9
-----------------------------------------------------------------------------------------------------------------------------
        DINITROBENZENE
              USSR                  DW                  MPC              A      S                .500  MG/L              12
-----------------------------------------------------------------------------------------------------------------------------
        DINITROCHLOROBENZENE
              USSR                  DW                  MPC              A      S                .500  MG/L              12
-----------------------------------------------------------------------------------------------------------------------------
        DINITRONAPHTHALENE
              USSR                  DW                  MPC              A      S               1.000  MG/L              12
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                    #######   PALIS SYSTEM PARAMETER REPORT---05/12/88   #######
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      CHEMICAL
      --------
 CAS#          AGENCY                  CATEGORY               LIMIT           LTYPE  STATUS          VALUE  UOM        REFCODE
 ----          ------                  --------               -----           -----  ------          -----  ---        -------
      DINITROPHENOL
               NIOSH                   DW                     SNARL CHR         H      S              .110  MG/L            24
----------------------------------------------------------------------------------------------------------------------------------
      DINITROPHENOL(2,4)
 51-28-5       USSR                    DW                     MPC               H      S              .030  MG/L            12
----------------------------------------------------------------------------------------------------------------------------------
      DINITROPHENOLS
               EPA                     AMBIENT                AWQC              H      S            70.000  UG/L             9
----------------------------------------------------------------------------------------------------------------------------------
      DINITROTOLUENE(2,4)
               EPA                     AMBIENT                AWQC              H      S              .110  UG/L **          9
----------------------------------------------------------------------------------------------------------------------------------
      DINOSEB
 88-85-7       EPA                     DW                     HA LIFE           H      S            35.000  UG/L            27
                                                              HA LIFE A         H      S             7.000  UG/L            27
                                                              HA1 C             H      S              .300  MG/L            27
                                                              HA10 C            H      S              .300  MG/L            27
                                                              HALT A            H      S            35.000  UG/L            27
                                                              HALT C            H      S            10.000  UG/L            27
----------------------------------------------------------------------------------------------------------------------------------
      DIOXANE(PARA)
               EPA                     DW                     HA1 C             H      S             4.120  MG/L             7
                                                              HA10 C            H      S              .412  MG/L             7
----------------------------------------------------------------------------------------------------------------------------------
      DIOXIN(D2CDD)
               MOE                     DW                     IMAC              H      P        15,000.000  PG/L ++         18
----------------------------------------------------------------------------------------------------------------------------------
      DIOXIN(H6CDD)
               MOE                     DW                     IMAC              H      P           150.000  PG/L ++         18
----------------------------------------------------------------------------------------------------------------------------------
      DIOXIN(H7CDD)
               MOE                     DW                     IMAC              H      P         1,500.000  PG/L ++         18
----------------------------------------------------------------------------------------------------------------------------------
      DIOXIN(M1CDD)
               MOE                     DW                     IMAC              H      P       150,000.000  PG/L ++         18
----------------------------------------------------------------------------------------------------------------------------------
      DIOXIN(O8CDD)
               MOE                     DW                     IMAC              H      P       150,000.000  PG/L ++         18
----------------------------------------------------------------------------------------------------------------------------------
      DIOXIN(P5CDD)
               MOE                     DW                     IMAC              H      P           150.000  PG/L ++         18
----------------------------------------------------------------------------------------------------------------------------------
      DIOXIN(T3CDD)
               MOE                     DW                     IMAC              H      P         1,500.000  PG/L ++         18
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                 #######   PALIS SYSTEM PARAMETER REPORT---05/12/88   #######
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        CHEMICAL
        --------
 CAS#          AGENCY               CATEGORY            LIMIT           LTYPE  STATUS          VALUE  UOM          REFCODE
 ----          ------               --------            -----           -----  ------          -----  ---          -------
        DIOXIN(T4CDD)
               MOE                  DW                  IMAC              H      P         1,500.000  PG/L **           18
------------------------------------------------------------------------------------------------------------------------
        DIOXIN(T4CDD-2,3,7,8)
 1746-01-6     EPA                  AMBIENT             AWQC              H      S              .010  PG/L **            9
                                    DW                  DWEL              H      S              .035  NG/L               7
                                                        HA1 C             H      S             1.000  NG/L               7
                                                        HA10 C            H      S              .100  NG/L               7
                                                        HALT A            H      S              .035  NG/L               7
                                                        HALT C            H      S              .010  NG/L               7
               MOE                  DW                  IMAC              H      P            15.000  PG/L **           18
               NEW YORK             GW                  GWQS              H      S              .035  NG/L              16
------------------------------------------------------------------------------------------------------------------------
        DIOXIN(TCDD)
               EPA                  DW                  SNAEL             H      S              .035  NG/L              10
------------------------------------------------------------------------------------------------------------------------
        DIPHENAMID
 957-51-7.     CALIFORNIA ST. DHS   DW                  AL                H      S              .040  MG/L               3
               EPA                  DW                  HA LIFE           H      S             1.000  MG/L              27
                                                        HA LIFE A         H      S              .200  MG/L              27
                                                        HA1 C             H      S              .300  MG/L              27
                                                        HA10 C            H      S              .300  MG/L              27
                                                        HALT C            H      S              .300  MG/L              27
------------------------------------------------------------------------------------------------------------------------
        DIPHENYLHYDRAZINE
 122-66-7      EPA                  AMBIENT             AWQC              H      S            42.000  NG/L **            9
------------------------------------------------------------------------------------------------------------------------
        DIPHENYLOLPROPANE
               USSR                 DW                  MPC               A      S              .010  MG/L              12
------------------------------------------------------------------------------------------------------------------------
        DIPROPYLAMINE
 142-84-7      USSR                 DW                  MPC               A      S              .500  MG/L              12
------------------------------------------------------------------------------------------------------------------------
        DIQUAT
 85-00-7       NSW                  DW                  MAC               H      S              .070  MG/L               5
------------------------------------------------------------------------------------------------------------------------
        DIQUAT DIBROMIDE
               NACA                 GW                  MGL               H      P              .050  MG/L              22
------------------------------------------------------------------------------------------------------------------------
        DISODIUM MONOALKYLSULFOSUCCINATE
               USSR                 DW                  MPC               A      S              .500  MG/L              12
------------------------------------------------------------------------------------------------------------------------
        DISULFOTON
 298-04-4      EPA                  DW                  HA LIFE           H      S             1.000  UG/L              27
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CHEMICAL CAS#	AGENCY	CATEGORY	LIMIT	LTYPE	STATUS	VALUE	UOM	REFCODE
DISULFOTON								
298-04-4	EPA	DW	HA LIFE A	H	S	.300	UG/L	27
			HA1 C	H	S	10.000	UG/L	27
			HA10 C	H	S	10.000	UG/L	27
			HALT A	H	S	9.000	UG/L	27
			HALT C	H	S	3.000	UG/L	27
			SNAEL	H	S	.035	UG/L	10
	NACA	GW	HGL	H	P	.025	MG/L	22
DITHANE								
	NEW YORK	GW	GWQS	H	S	1.750	UG/L	16
DIURON								
330-54-1	EPA	DW	HA LIFE	H	S	.070	MG/L	27
			HA LIFE A	H	S	.014	MG/L	27
			HA1 C	H	S	1.000	MG/L	27
			HA10 C	H	S	1.000	MG/L	27
			HALT A	H	S	.880	MG/L	27
			HALT C	H	S	.250	MG/L	27
	H&W	DW	MAC	H	S	.150	MG/L	5
	NACA	GW	HGL	H	P	.063	MG/L	22
	USSR	DW	MPC	A	S	1.000	MG/L	12
DRY RESIDUE								
	EEC	DW	MADC	A	S	1,500.000	MG/L	6
DYPHYLLINE								
479-18-5	NEW YORK	AMBIENT	AWQS	C	S	50.000	UG/L	16
ENDOSULFAN								
115-29-7	EPA	AMBIENT	AWQC	H	S	74.000	UG/L	9
	NACA	GW	HGL	H	P	.075	MG/L	22
ENDOTHALL								
145-73-3	EPA	DW	HA LIFE	H	S	.700	MG/L	27
			HA LIFE A	H	S	.140	MG/L	27
			HA1 C	H	S	.800	MG/L	27
			HA10 C	H	S	.800	MG/L	27
			HALT C	H	S	.200	MG/L	27
ENDRIN								
72-20-8	AWWA	DW	ELLTC	H	P	.001	MG/L	23

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                        #######   PALIS SYSTEM PARAMETER REPORT---05/12/88   #######
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        CHEMICAL
        --------
 CAS#        AGENCY              CATEGORY            LIMIT           LTYPE  STATUS         VALUE  UOM        REFCODE
 ----        ------              --------            -----           -----  ------         -----  ---        -------
        ENDRIN
 72-20-8     AWWA                DW                  ELSTC             H      P             .010  MG/L            23
             EPA                 AMBIENT             AWQC              H      S            1.000  UG/L             9
                                 DW                  HA LIFE           H      S            1.600  UG/L             7
                                                     HA LIFE A         H      S             .320  UG/L             7
                                                     HA1 C             H      S           20.000  UG/L             7
                                                     HA10 C            H      S            5.000  UG/L             7
                                                     HALT A            H      S           16.000  UG/L             7
                                                     HALT C            H      S            4.500  UG/L             7
                                                     MCL               H      S             .200  UG/L            28
             FLORIDA ST.         DW                  MCL               H      S             .200  UG/L             2
             MOE                 DW                  MAC               H      S             .200  UG/L             1
             NEW JERSEY          GW                  GW1               A      S             .004  UG/L            21
                                                     GW2               A      S             .004  UG/L            21
                                                     GW3               A      S             .004  UG/L            21
             NEW YORK            AMBIENT             AWQS              H      S             .200  UG/L            16
                                 DW                  MCL               H      S             .200  UG/L            25
.......................................................................................................................
        EPICHLOROHYDRIN
 106-89-8    EPA                 DW                  DWEL              H      S             .070  MG/L             7
                                                     HA1 C             H      S             .140  MG/L             7
                                                     HA10 C            H      S             .140  MG/L             7
                                                     HALT A            H      S             .076  MG/L             7
                                                     MCLG              H      P             .000  MG/L             8
             USSR                DW                  MPC               H      S             .010  MG/L            12
.......................................................................................................................
        ETHALFLURALIN
             NACA                GW                  HGL               H      P            3.750  MG/L            22
.......................................................................................................................
        ETHER SULFONATE
             USSR                DW                  MPC               A      S             .200  MG/L            12
.......................................................................................................................
        ETHION
 563-12-2    CALIFORNIA ST. DHS  DW                  AL                H      S             .035  MG/L             3
             NACA                GW                  HGL               H      P             .050  MG/L            22
.......................................................................................................................
        ETHYL ACRYLATE
 140-88-5    USSR                DW                  MPC               A      S             .005  MG/L            12
.......................................................................................................................
        ETHYL BENZENE
 100-41-4    EPA                 AMBIENT             AWQC              H      S            1.400  MG/L             9
                                 DW                  HA LIFE           H      S        3,400.000  UG/L             7
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                    #######   PALIS SYSTEM PARAMETER REPORT---05/12/88   #######
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        CHEMICAL
        --------
CAS#          AGENCY                 CATEGORY         LIMIT            LTYPE  STATUS          VALUE  UOM       REFCODE
----          ------                 --------         -----            -----  ------          -----  ---       -------
        ETHYL BENZENE
100-41-4      EPA                    DW               HA LIFE A        H      S             680.000  UG/L            7
                                                      HA1 C            H      S          32,000.000  UG/L            7
                                                      HA10 C           H      S           3,200.000  UG/L            7
                                                      HALT C           H      S                .970  MG/L            7
                                                      MCLG             H      P                .680  MG/L            8
              H&W                    DW               AO               A      S               2.400  UG/L            5
              USSR                   DW               MPC              A      S                .010  UG/L           12
-----------------------------------------------------------------------------------------------------------------------
        ETHYLAMINE
75-04-7       USSR                   DW               MPC              A      S                .500  MG/L           12
-----------------------------------------------------------------------------------------------------------------------
        ETHYLENE
74-85-1       USSR                   DW               MPC              A      S                .500  MG/L           12
-----------------------------------------------------------------------------------------------------------------------
        ETHYLENE CHLOROHYDRIN
107-07-3      AWWA                   DW               ELSTC            H      P               2.000  MG/L           23
-----------------------------------------------------------------------------------------------------------------------
        ETHYLENE DIBROMIDE
106-93-4      CALIFORNIA ST. DHS     DW               AL               H      S                .050  UG/L            3
              EPA                    DW               HA1 C            H      S                .008  MG/L            7
                                                      HA10 C           H      S                .008  MG/L            7
                                                      MCLG             H      P                .000  MG/L            8
              FLORIDA ST.            DW               MCL              H      S                .020  UG/L            2
              HAWAII                 GW               LTAL             H      P              20.000  NG/L           19
                                                      LTG              H      P               2.000  NG/L           19
                                                      STAL             H      P              85.000  NG/L           19
-----------------------------------------------------------------------------------------------------------------------
        ETHYLENE GLYCOL
107-21-1      EPA                    DW               DWEL             H      S          35,000.000  UG/L            7
                                                      HA LIFE A        H      S           7,000.000  UG/L            7
                                                      HA1 C            H      S          19,000.000  UG/L            7
                                                      HA10 C           H      S           5,500.000  UG/L            7
                                                      HALT A           H      S          19,250.000  UG/L            7
                                                      HALT C           H      S           5,500.000  UG/L            7
              USSR                   DW               MPC              H      S               1.000  MG/L           12
-----------------------------------------------------------------------------------------------------------------------
        ETHYLENE THIOUREA
96-45-7       EPA                    DW               HA LIFE          H      S               1.050  UG/L           27
                                                      HA1 C            H      S                .250  MG/L           27
                                                      HA10 C           H      S                .250  MG/L           27
                                                      HALT A           H      S                .440  MGL            27
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                          #######  PALIS SYSTEM PARAMETER REPORT---05/12/88  #######
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        CHEMICAL
        --------
  CAS#        AGENCY              CATEGORY            LIMIT          LTYPE STATUS            VALUE UOM        REFCODE
  ----        ------              --------            -----          ----- ------            ----- ---        -------
        ETHYLENE THIOUREA
  96-45-7     EPA                 DW                  HALT C         H     S                 .125 MG/L            27
...................................................................................................................
        ETHYLMERCURIC CHLORIDE
  107-27-7    USSR                DW                  MPC            H     S                 .100 UG/L            12
...................................................................................................................
        FECAL COLIFORMS
              EEC                 DW                  MADC           H     S                 .000 COUNT/ML         6
              H&W                 DW                  MAC            H     S                 .000 COUNT/ML        28
...................................................................................................................
        FECAL STREPTOCOCCI
              EEC                 DW                  MADC           H     S                 .000 COUNT/ML         6
...................................................................................................................
        FENAMIPHOS
  22224-92-6  EPA                 DW                  HA LIFE        H     S                9.000 UG/L            27
                                                      HA LIFE A      H     S                1.800 UG/L            27
                                                      HA1 C          H     S                9.000 UG/L            27
                                                      HA10 C         H     S                9.000 UG/L            27
                                                      HALT A         H     S               18.000 UG/L            27
                                                      HALT C         H     S                5.000 UG/L            27
              NACA                GW                  MGL            H     P                 .025 MG/L            22
...................................................................................................................
        FENSULFOTHION
  115-90-2    NACA                GW                  MGL            H     P                 .018 MG/L            22
...................................................................................................................
        FENTHION
  55-38-9     NACA                GW                  MGL            H     P                 .075 MG/L            22
...................................................................................................................
        FERBAM
              NEW YORK            GW                  GWQS           H     S                4.180 UG/L            16
...................................................................................................................
        FERROCYANIDES
              USSR                DW                  MPC            H     S                1.250 MG/L            12
...................................................................................................................
        FLUCHLORALIN
              NACA                GW                  MGL            H     P                 .030 MG/L            22
...................................................................................................................
        FLUOMETURON
  2164-17-2   EPA                 DW                  HA LIFE        H     S                 .438 MG/L            27
                                                      HA LIFE A      H     S                 .090 MG/L            27
                                                      HA1 C          H     S                1.500 MG/L            27
                                                      HA10 C         H     S                1.500 MG/L            27
```

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CHEMICAL	CAS#	AGENCY	CATEGORY	LIMIT	LTYPE	STATUS	VALUE	UOM	REFCODE
FLUOMETURON	2164-17-2	EPA	DW	HALT A	H	S	5.300	MG/L	27
				HALT C	H	S	1.500	MG/L	27
FLUORANTHENE	206-44-0	EPA	AMBIENT	AWQC	H	S	42.000	UG/L	9
FLUORIDE		EEC	DW	MADC	A	S	700.000	UG/L	6
		EPA	DW	MCL	H	S	4.000	MG/L	28
				SMCL	A	S	2.000	MG/L	28
		H&W	DW	MAC	H	S	1.500	MG/L	5
		MOE	DW	MAC	H	S	2.400	MG/L	1
		NEW JERSEY	GW	GW1	A	S	2.000	MG/L	21
				GW2	A	S	2.000	MG/L	21
				GW3	A	S	2.000	MG/L	21
		NEW YORK	AMBIENT	AWQS	H	S	1,500.000	UG/L	16
			DW	MCL	H	S	2.200	MG/L	25
			GW	GWQS	H	S	1.500	MG/L	16
		USSR	DW	MPC	H	S	1.500	MG/L	12
		WHO	DW	GV	H	S	1.500	MG/L	4
FLUORINE	7782-41-4	USSR	DW	MPC	H	S	1.500	MG/L	12
FOAMING AGENTS		EPA	DW	SMCL	A	S	.500	MG/L	28
		NEW JERSEY	GW	GW1	A	S	.500	MG/L	21
				GW2	A	S	.500	MG/L	21
				GW3	A	S	.500	MG/L	21
		NEW YORK	GW	GWQS	H	S	.500	MG/L	16
FOLPET	133-07-3	EPA	DW	SNAEL	H	S	.056	MG/L	10
		NEW YORK	GW	GWQS	H	S	56.000	UG/L	16
FONOFOS	944-22-9	EPA	DW	HA LIFE	H	S	70.000	UG/L	27
				HA LIFE A	H	S	14.000	UG/L	27
				HA1 C	H	S	20.000	UG/L	27
				HA10 C	H	S	20.000	UG/L	27
				HALT A	H	S	70.000	UG/L	27

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                 #######   PALIS SYSTEM PARAMETER REPORT---05/12/88   #######
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      CHEMICAL
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CAS#          AGENCY                CATEGORY             LIMIT            LTYPE  STATUS            VALUE  UOM         REFCODE
----          ------                --------             -----            -----  ------            -----  ---         -------
      FONOFOS
944-22-9      EPA                   DW                   HALT C           H      S                20.000  UG/L             27
..............................................................................................................................
      FORMALDEHYDE
50-00-0       USSR                  DW                   MPC              H      S                  .500  MG/L             12
..............................................................................................................................
      FURAN
110-00-9      USSR                  DW                   MPC              H      S                  .200  MG/L             12
..............................................................................................................................
      FURAN(D2CDF)
              MOE                   DW                   IMAC             H      P           150,000.000  PG/L **          18
..............................................................................................................................
      FURAN(H6CDF)
              MOE                   DW                   IMAC             H      P               150.000  PG/L **          18
..............................................................................................................................
      FURAN(H7CDF)
              MOE                   DW                   IMAC             H      P             1,500.000  PG/L **          18
..............................................................................................................................
      FURAN(M1CDF)
              MOE                   DW                   IMAC             H      P           150,000.000  PG/L **          18
..............................................................................................................................
      FURAN(O8CDF)
              MOE                   DW                   IMAC             H      P           150,000.000  PG/L **          18
..............................................................................................................................
      FURAN(P5CDF)
              MOE                   DW                   IMAC             H      P                30.000  PG/L **          18
..............................................................................................................................
      FURAN(T3CDF)
              MOE                   DW                   IMAC             H      P             1,500.000  PG/L **          18
..............................................................................................................................
      FURAN(T4CDF)
              MOE                   DW                   IMAC             H      P                30.000  PG/L **          18
..............................................................................................................................
      FURFUROL
              USSR                  DW                   MPC              A      S                 1.000  MG/L             12
..............................................................................................................................
      GLYPHOSATE
1071-83-6     EPA                   DW                   HA LIFE          H      S                 3.500  MG/L             27
                                                         HA LIFE A        H      S                  .700  MG/L             27
                                                         HA1 C            H      S                17.500  MG/L             27
                                                         HA10 C           H      S                17.500  MG/L             27
              NHW                   DW                   IMAC             H      S                  .280  MG/L              5
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                  #######   PALIS SYSTEM PARAMETER REPORT---05/12/88   #######
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        CHEMICAL
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CAS#         AGENCY              CATEGORY          LIMIT          LTYPE  STATUS          VALUE  UOM        REFCODE
----         ------              --------          -----          -----  ------          -----  ---        -------
        GROSS ALPHA RADIATION
             EPA                 DW                MCL            H      S              15.000  PCI/L           28
             NEW YORK            AMBIENT           AWQS           H      S              15.000  PCI/L           16
--------------------------------------------------------------------------------------------------------------------
        GROSS BETA RADIATION
             NEW YORK            AMBIENT           AWQS           H      S           1,000.000  PCI/L           16
--------------------------------------------------------------------------------------------------------------------
        HALOMETHANES
             EPA                 AMBIENT           AWQC           H      S                .190  UG/L **          9
--------------------------------------------------------------------------------------------------------------------
        HCB
             EPA                 DW                SNAEL          H      S                .350  UG/L            10
--------------------------------------------------------------------------------------------------------------------
        HEPTACHLOR
76-44-8      AWWA                DW                ELLTC          H      P                .018  MG/L            23
                                                   ELSTC          H      P                .100  MG/L            23
             CALIFORNIA ST. DHS  DW                AL             H      S                .020  UG/L             3
             EPA                 AMBIENT           AWQC           H      S                .280  NG/L **          9
                                 DW                DWEL           H      S              17.500  UG/L             7
                                                   HA1 C          H      S                .010  MG/L             7
                                                   HA10 C         H      S                .010  MG/L             7
                                                   HALT C         H      S               1.500  UG/L             7
                                                   MCLG           H      P                .000  MG/L             8
             USSR                DW                MPC            H      S                .050  MG/L            12
             WHO                 DW                GV             H      S                .100  UG/L             4
--------------------------------------------------------------------------------------------------------------------
        HEPTACHLOR & HEPTACHLOR EPOXIDE
76-44-8+HE   H&W                 DW                MAC            H      S                .003  MG/L             5
             MOE                 DW                MAC            H      S                .003  MG/L             1
             NEW YORK            AMBIENT           AWQS           H      S                .009  UG/L            16
             WHO                 DW                GV             H      S                .100  UG/L             4
--------------------------------------------------------------------------------------------------------------------
        HEPTACHLOR EPOXIDE
1042-57-3    AWWA                DW                ELLTC          H      P                .018  MG/L            23
                                                   ELSTC          H      P                .050  MG/L            23
             CALIFORNIA ST. DHS  DW                AL             H      S                .100  UG/L             3
             EPA                 DW                DWEL           H      S                .400  UG/L             7
                                                   HA1 C          H      S                .010  MG/L             7
                                                   HA10 C         H      S                .010  MG/L             7
                                                   HALT C         H      S               1.500  UG/L             7
                                                   MCLG           H      P                .000  MG/L             8
--------------------------------------------------------------------------------------------------------------------
        HEPTYL ALCOHOL
             USSR                DW                MPC            H      S                .005  MG/L            12
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CHEMICAL	CAS#	AGENCY	CATEGORY	LIMIT	LTYPE	STATUS	VALUE	UOM	REFCODE
HEXACHLORANE		USSR	DW	MPC	A	S	.020	MG/L	12
HEXACHLOROBENZENE	118-74-1	EPA	AMBIENT	AWQC	H	S	.720	NG/L **	9
			DW	DWEL	H	S	28.000	UG/L	7
				HA1 C	H	S	50.000	UG/L	7
				HA10 C	H	S	50.000	UG/L	7
				HALT A	H	S	175.000	UG/L	7
				HALT C	H	S	50.000	UG/L	7
		NEW YORK	GW	GWQS	H	S	.350	UG/L	16
		USSR	DW	MPC	H	S	.050	MG/L	12
		WHO	DW	GV	H	S	.010	UG/L	4
HEXACHLOROBUTADIENE	87-68-3	EPA	AMBIENT	AWQC	H	S	.450	UG/L **	9
		NEW YORK	AMBIENT	AWQS	H	S	.500	UG/L	16
		USSR	DW	MPC	A	S	.010	MG/L	12
HEXACHLOROBUTANE		USSR	DW	MPC	A	S	.010	MG/L	12
HEXACHLOROCYCLOPENTADIENE	77-47-4	EPA	AMBIENT	AWQC	H	S	206.000	UG/L	9
		NEW YORK	AMBIENT	AWQS	H	S	1.000	UG/L	16
		USSR	DW	MPC	A	S	.001	MG/L	12
HEXACHLOROETHANE	67-72-1	EPA	AMBIENT	AWQC	H	S	1.900	UG/L	9
		USSR	DW	MPC	A	S	.010	MG/L	12
HEXACHLOROPHENE	70-30-4	EPA	DW	SNAEL	H	S	.350	UG/L	10
		NEW YORK	GW	GWQS	H	S	7.000	UG/L	16
HEXAMETHYLENE DIAMINE	124-09-4	USSR	DW	MPC	H	S	.010	MG/L	12
HEXANATE		USSR	DW	MPC	H	S	5.000	MG/L	12
HEXANE	110-54-3	EPA	DW	HA1 C	H	S	13.000	MG/L	7

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                                #######   PALIS SYSTEM PARAMETER REPORT---05/12/88   #######
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         CHEMICAL
         --------
  CAS#          AGENCY                CATEGORY              LIMIT            LTYPE  STATUS           VALUE  UOM       REFCODE
  ----          ------                --------              -----            -----  ------           -----  ---       -------
         HEXANE
  110-54-3      EPA                   DW                    HA10 C           H      S                4.000  MG/L            7
                                                            HALT A           H      S               14.000  MG/L            7
                                                            HALT C           H      S                4.000  MG/L            7
-----------------------------------------------------------------------------------------------------------------------------
         HEXAZINONE
  51235-04-2    EPA                   DW                    HA LIFE          H      S                1.050  MG/L           27
                                                            HA LIFE A        H      S                 .210  MG/L           27
                                                            HA1 C            H      S                2.500  MG/L           27
                                                            HA10 C           H      S                2.500  MG/L           27
                                                            HALT A           H      S                8.750  MG/L           27
                                                            HALT C           H      S                2.500  MG/L           27
                NACA                  GW                    HGL              H      P                 .125  MG/L           22
-----------------------------------------------------------------------------------------------------------------------------
         HYDRAZINE
  302-01-2      USSR                  DW                    MPC              H      S                 .010  MG/L           12
-----------------------------------------------------------------------------------------------------------------------------
         HYDROQUINONE
  123-31-9      USSR                  DW                    MPC              A      S                 .200  UG/L           12
-----------------------------------------------------------------------------------------------------------------------------
         IODINE-131
                H&W                   DW                    MAC              H      S               10.000  BECQ/L          5
                MOE                   DW                    MAC              H      S               10.000  BECQ/L          1
-----------------------------------------------------------------------------------------------------------------------------
         IRON
  7439-89-6     EEC                   DW                    GL               A      S               50.000  UG/L            6
                                                            MADC             A      S              200.000  UG/L            6
                EPA                   AMBIENT               AWQC             H      S                 .300  MG/L            9
                                      DW                    SMCL             A      S                 .300  MG/L           28
                H&W                   DW                    AO               A      S                 .300  MG/L            5
                MOE                   DW                    MDC              A      S                 .300  MG/L            1
                NEW JERSEY            GW                    GW1              A      S                 .300  MG/L           21
                                                            GW2              A      S                 .300  MG/L           21
                                                            GW3              A      S                 .300  MG/L           21
                NEW YORK              AMBIENT               AWQS             H      S              300.000  UG/L           16
                                      DW                    MCL              H      S                 .300  MG/L           25
                                      GW                    GWQS             H      S                 .300  MG/L           16
                USSR                  DW                    MPC              A      S                 .500  MG/L           12
                                                                             H      S                 .500  MG/L           12
                WHO                   DW                    GV               A      S                 .300  MG/L            4
-----------------------------------------------------------------------------------------------------------------------------
         ISOBUTYLENE
  115-11-7      USSR                  DW                    MPC              A      S                 .500  MG/L           12
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                    #######  PALIS SYSTEM PARAMETER REPORT---05/12/88  #######
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         CHEMICAL
         --------
 CAS#         AGENCY              CATEGORY            LIMIT           LTYPE  STATUS          VALUE  UOM        REFCODE
 ----         ------              --------            -----           -----  ------          -----  ---        -------
         ISOCROTONITRILE
              USSR                DW                  MPC             H      S                .100  MG/L            12
-----------------------------------------------------------------------------------------------------------------------
         ISOFENPHOS
              NACA                GW                  HGL             H      P                .050  MG/L            22
-----------------------------------------------------------------------------------------------------------------------
         ISOPHORONE
 78-59-1      EPA                 AMBIENT             AWQC            H      S               5.200  MG/L             9
-----------------------------------------------------------------------------------------------------------------------
         ISOPRENE
 78-79-5      USSR                DW                  MPC             A      S                .005  MG/L            12
-----------------------------------------------------------------------------------------------------------------------
         ISOPROPYLAMINE
 75-31-0      USSR                DW                  MPC             H      S               2.000  MG/L            12
-----------------------------------------------------------------------------------------------------------------------
         ISOPROPYLBENZENE HYDROPEROXIDE
              USSR                DW                  MPC             H      S                .500  MG/L            12
-----------------------------------------------------------------------------------------------------------------------
         ISOPROPYLCHLOROPHENYLCARBAMATE
              USSR                DW                  MPC             A      S               1.000  MG/L            12
-----------------------------------------------------------------------------------------------------------------------
         ISOPROPYLPHENYLCARBAMATE
              USSR                DW                  MPC             A      S                .200  MG/L            12
-----------------------------------------------------------------------------------------------------------------------
         KEROSENE
 8008-20-6    USSR                DW                  MPC             A      S                .100  MG/L            12
-----------------------------------------------------------------------------------------------------------------------
         KJELDAHL NITROGEN
              EEC                 DW                  MADC            A      S               1.000  MG/L             6
-----------------------------------------------------------------------------------------------------------------------
         LEAD
 7439-92-1    EEC                 DW                  MADC            H      S              50.000  UG/L             6
              EPA                 AMBIENT             AWQC            H      S              50.000  UG/L             9
                                  DW                  HA LIFE         H      S                .020  UG/L             7
                                                      HALT A          H      S                .020  MG/L             7
                                                      MCL             H      S                .050  MG/L            13
                                                      MCLG            H      P                .000  MG/L             8
              FLORIDA ST.         DW                  MCL             H      S                .050  MG/L             2
              N&W                 DW                  MAC             H      S                .050  MG/L             5
              MOE                 DW                  MAC             H      S                .050  MG/L             1
              NEW YORK            AMBIENT             AWQS            H      S              50.000  UG/L            16
                                  DW                  MCL             H      S                .050  MG/L            25
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                 #######   PALIS SYSTEM PARAMETER REPORT---05/12/88   #######
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        CHEMICAL
        --------
 CAS#         AGENCY                CATEGORY              LIMIT             LTYPE  STATUS            VALUE  UOM        REFCODE
 ----         ------                --------              -----             -----  ------            -----  ---        -------
        LEAD
 7439-92-1    NEW YORK              GW                    GWQS              H      S                  .025  MG/L            16
              USSR                  DW                    MPC               H      S                  .100  MG/L            12
              WHO                   DW                    GV                H      S                  .050  MG/L             4
------------------------------------------------------------------------------------------------------------------------------
        LEAD AND COMPOUNDS
 7439-92-1+   NEW JERSEY            GW                    GW1               A      S                  .050  MG/L            21
                                                          GW2               A      S                  .050  MG/L            21
                                                          GW3               A      S                  .050  MG/L            21
------------------------------------------------------------------------------------------------------------------------------
        LINDANE
 58-89-9      AWWA                  DW                    ELLTC             H      P                  .056  MG/L            23
                                                          ELSTC             H      P                 2.000  MG/L            23
              EPA                   AMBIENT               AWQC              H      S                18.600  NG/L **          9
                                    DW                    HA LIFE           H      S                  .010  MG/L             7
                                                          HA LIFE A         H      S                  .200  UG/L             7
                                                          HA1 C             H      S                 1.200  MG/L             7
                                                          HA10 C            H      S                 1.200  MG/L             7
                                                          HALT A            H      S                  .120  MG/L             7
                                                          HALT C            H      S                  .033  MG/L             7
                                                          MCL               H      S                  .400  UG/L            28
                                                          MCLG              H      P                  .200  UG/L             8
              FLORIDA ST.           DW                    MCL               H      S                  .004  MG/L             2
              H&W                   DW                    MAC               H      S                  .004  MG/L             5
              MOE                   DW                    MAC               H      S                  .004  MG/L             1
              NAS                   DW                    SNARL 7           H      S               500.000  UG/L            11
              NEW YORK              DW                    MCL               H      S                 4.000  UG/L            25
              WHO                   DW                    GV                H      S                  .003  MG/L             4
------------------------------------------------------------------------------------------------------------------------------
        LINURON
 330-55-2     NACA                  GW                    HGL               H      P                  .063  MG/L            22
------------------------------------------------------------------------------------------------------------------------------
        LUTIDINE(2,5)
              USSR                  DW                    MPC               H      S                  .050  MG/L            12
------------------------------------------------------------------------------------------------------------------------------
        M-81
              USSR                  DW                    MPC               A      S                  .001  MG/L            12
------------------------------------------------------------------------------------------------------------------------------
        M-CHLOROANILINE
 108-42-9     USSR                  DW                    MPC               H      S                  .200  MG/L            12
------------------------------------------------------------------------------------------------------------------------------
        M-DIISOPROPYLBENZENE
              USSR                  DW                    MPC               H      S                  .050  MG/L            12
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####### PALIS SYSTEM PARAMETER REPORT---05/12/88 #######

CHEMICAL

CAS#	AGENCY	CATEGORY	LIMIT	LTYPE	STATUS	VALUE	UOM	REFCODE
M-NITROPHENOL								
554-84-7	NIOSH	DW	SNARL 7	H	S	.290	MG/L	24
	USSR	DW	MPC	H	S	.060	MG/L	12
MAGNESIUM								
7439-95-4	EEC	DW	GL	A	S	30.000	MG/L	6
			MADC	A	S	50.000	MG/L	6
	NEW YORK	AMBIENT	AWQS	H	S	35,000.000	UG/L	16
MALATHION								
121-75-5	CALIFORNIA ST. DHS	DW	AL	H	S	160.000	UG/L	3
	EPA	DW	SNAEL	H	S	7.000	UG/L	10
	H&W	DW	MAC	H	S	.190	MG/L	5
	NEW YORK	GW	GWQS	H	S	7.000	UG/L	16
MALEIC ACID								
110-16-7	USSR	DW	MPC	A	S	1.000	MG/L	12
MALEIC HYDRAZIDE								
123-33-1	EPA	DW	HA LIFE	H	S	17.500	MG/L	27
			HA LIFE A	H	S	3.500	MG/L	27
			HA1 C	H	S	10.000	MG/L	27
			HA10 C	H	S	10.000	MG/L	27
			HALT A	H	S	17.500	MG/L	27
			HALT C	H	S	5.000	MG/L	27
MANEB								
	NEW YORK	GW	GWQS	H	S	1.750	UG/L	16
MANEB(&ZINEB)								
	EPA	DW	SNAEL	H	S	1.750	UG/L	10
MANGANESE								
7439-96-5	EEC	DW	GL	A	S	20.000	UG/L	6
			MADC	A	S	50.000	UG/L	6
	EPA	AMBIENT	AWQC	H	S	50.000	UG/L	9
		DW	SMCL	A	S	.050	MG/L	28
	H&W	DW	AO	A	S	.050	MG/L	5
	MOE	DW	MOC	A	S	.050	MG/L	1
	NEW JERSEY	GW	GW1	A	S	.050	MG/L	21
			GW2	A	S	.050	MG/L	21
			GW3	A	S	.050	MG/L	21

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                    #######   PALIS SYSTEM PARAMETER REPORT---05/12/88   #######
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       CHEMICAL
       --------
 CAS#        AGENCY             CATEGORY          LIMIT          LTYPE  STATUS        VALUE  UOM      REFCODE
 ----        ------             --------          -----          -----  ------        -----  ---      -------
       MANGANESE
 7439-96-5   NEW YORK           AMBIENT           AWQS           H      S           300.000  UG/L          16
                                DW                MCL            H      S              .300  MG/L          25
                                GW                GWQS           H      S              .300  MG/L          16
             WHO                DW                GV             A      S              .100  MG/L           4
--------------------------------------------------------------------------------------------------------------
       MERCAPTODIETHYLAMINE(BETA)
             USSR               DW                MPC            A      S              .100  MG/L          12
--------------------------------------------------------------------------------------------------------------
       MERCURY
 7439-97-6   EEC                DW                MADC           H      S             1.000  UG/L           6
             EPA                AMBIENT           AWQC           H      S           144.000  NG/L           9
                                DW                HA LIFE        H      S             5.500  UG/L           7
                                                  HA LIFE A      H      S             1.100  UG/L           7
                                                  HA1 C          H      S             1.580  UG/L           7
                                                  HA10 C         H      S             1.580  UG/L           7
                                                  HALT C         H      S             1.580  UG/L           7
                                                  MCL            H      S              .002  MG/L          28
                                                  MCLG           H      P              .003  MG/L           8
             FLORIDA ST.        DW                MCL            H      S              .002  MG/L           2
             H&W                DW                MAC            H      S              .001  MG/L           5
             MOE                DW                MAC            H      S              .001  MG/L           1
             NEW YORK           AMBIENT           AWQS           H      S             2.000  UG/L          16
                                DW                MCL            H      S              .002  MG/L          25
                                GW                GWQS           H      S              .002  MG/L          16
             USSR               DW                MPC            H      S              .005  MG/L          12
             WHO                DW                GV             H      S              .001  MG/L           4
--------------------------------------------------------------------------------------------------------------
       MERCURY AND COMPOUNDS
 9439-97-6+  NEW JERSEY         GW                GW1            A      S              .002  MG/L          21
                                                  GW2            A      S              .002  MG/L          21
                                                  GW3            A      S              .002  MG/L          21
--------------------------------------------------------------------------------------------------------------
       META-ACRYLAMIDE
             USSR               DW                MPC            H      S              .100  MG/L          12
--------------------------------------------------------------------------------------------------------------
       METALAXYL
             NACA               GW                HGL            H      P              .250  MG/L          22
--------------------------------------------------------------------------------------------------------------
       METHACRYLIC ACID
 79-41-4     EPA                DW                SNAEL          H      S            35.000  UG/L          10
--------------------------------------------------------------------------------------------------------------
       METHANE
 74-82-8     MOE                DW                MDC            A      S             3.000  L/M3           1
```

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                    #######   PALIS SYSTEM PARAMETER REPORT---05/12/88   #######
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       CHEMICAL
       --------
CAS#          AGENCY            CATEGORY          LIMIT          LTYPE  STATUS           VALUE  UOM       REFCODE
----          ------            --------          -----          -----  ------           -----  ---       -------
       METHOMYL
16752-77-5    EPA               DW                HA LIFE        H      S                 .875  MG/L           27
                                                  HA LIFE A      H      S                 .175  MG/L           27
                                                  HA1 C          H      S                 .250  MG/L           27
                                                  HA10 C         H      S                 .250  MG/L           27
                                                  HALT C         H      S                 .250  MG/L           27
              NACA              GW                HGL            H      P                 .250  MG/L           22
.......................................................................................................................
       METHOXYCHLOR
72-43-5       AWWA              DW                ELLTC          H      P                 .035  MG/L           23
                                                  ELSTC          H      P                2.800  MG/L           23
              EPA               AMBIENT           AWQC           H      S              100.000  UG/L            9
                                DW                HA LIFE        H      S            1,700.000  UG/L            7
                                                  HA LIFE A      H      S              340.000  UG/L            7
                                                  HA1 C          H      S            6,400.000  UG/L            7
                                                  HA10 C         H      S            2,000.000  UG/L            7
                                                  HALT C         H      S                 .500  MG/L            7
                                                  MCL            H      S                 .100  MG/L           28
                                                  MCLG           H      P                 .340  MG/L            8
                                                  SNAEL          H      S               35.000  UG/L           10
              FLORIDA ST.       DW                MCL            H      S                 .100  MG/L            2
              H&W               DW                MAC            H      S                 .900  MG/L            5
              MOE               DW                MAC            H      S                 .100  MG/L            1
              NEW YORK          AMBIENT           AWQS           H      S               35.000  UG/L           16
                                DW                MCL            H      S                 .100  MG/L           25
                                GW                GWQS           H      S               35.000  UG/L           16
              WHO               DW                GV             H      S               30.000  UG/L            4
.......................................................................................................................
       METHYL ACETATE
79-20-9       USSR              DW                MPC            H      S                 .100  MG/L           12
.......................................................................................................................
       METHYL ACRYLATE
96-33-3       USSR              DW                MPC            A      S                 .020  MG/L           12
.......................................................................................................................
       METHYL DEMETON
8022-00-2     USSR              DW                MPC            A      S                 .010  MG/L           12
.......................................................................................................................
       METHYL DITHIOCARBAMATE
              USSR              DW                MPC            A      S                 .020  MG/L           12
.......................................................................................................................
       METHYL ETHYL KETONE
78-93-3       EPA               DW                HA LIFE        H      S                 .860  MG/L            7
```

CAS#	AGENCY	CATEGORY	LIMIT	LTYPE	STATUS	VALUE	UOM	REFCODE
METHYL ETHYL KETONE								
78-93-3	EPA	DW	HA LIFE A	H	S	170.000	UG/L	7
			HA1 C	H	S	75.000	MG/L	7
			HA10 C	H	S	7.500	MG/L	7
			HALT A	H	S	8.600	MG/L	7
			HALT C	H	S	2.500	MG/L	7
	USSR	DW	MPC	A	S	1.000	MG/L	12
METHYL METHACRYLATE								
80-62-6	NEW YORK	GW	GWQS	H	S	.700	MG/L	16
METHYL PARATHION								
298-00-0	CALIFORNIA ST. DHS	DW	AL	H	S	.030	MG/L	3
	EPA	DW	HA LIFE	H	S	9.000	UG/L	27
			HA LIFE A	H	S	2.000	UG/L	27
			HA1 C	H	S	.310	MG/L	27
			HA10 C	H	S	.310	MG/L	27
			HALT A	H	S	.100	UG/L	27
			HALT C	H	S	30.000	UG/L	27
	H&W	DW	MAC	H	S	.007	MG/L	5
	MOE	DW	MAC	H	S	.007	MG/L	1
	USSR	DW	MPC	A	S	.020	MG/L	12
METHYLAMINE								
74-89-5	USSR	DW	MPC	H	S	1.000	MG/L	12
METHYLENE CHLORIDE								
75-09-2	CALIFORNIA ST. DHS	DW	AL	H	S	40.000	UG/L	3
	EPA	DW	HA LIFE	H	S	1,750.000	UG/L	7
			HA1 C	H	S	13,300.000	UG/L	7
			HA10 C	H	S	1,500.000	UG/L	7
	H&W	DW	MAC	H	S	.050	MG/L	5
	NAS	DW	SNARL 7	H	S	5,000.000	UG/L	11
	USSR	DW	MPC	A	S	7.500	UG/L	12
METHYLNITROPHOS								
	USSR	DW	MPC	A	S	.250	MG/L	12
METHYLOL META-ACRYLAMIDE								
	USSR	DW	MPC	H	S	.100	MG/L	12
METHYLSTYRENE(ALPHA)								
	USSR	DW	MPC	A	S	.100	MG/L	12

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                                 #######  PALIS SYSTEM PARAMETER REPORT---05/12/88  #######
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        CHEMICAL
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CAS#           AGENCY                 CATEGORY               LIMIT             LTYPE STATUS               VALUE UOM         REFCODE
----           ------                 --------               -----             ----- ------               ----- ---         -------
        METOLACHLOR
51218-45-2     EPA                    DW                     HA LIFE           H     S                     .525 MG/L             27
                                                             HA LIFE A         H     S                     .010 MG/L             27
                                                             HA1 C             H     S                    1.400 MG/L             27
                                                             HA10 C            H     S                    1.400 MG/L             27
                                                             HALT A            H     S                    1.050 MG/L             27
                                                             HALT C            H     S                     .300 MG/L             27
               H&W                    DW                     IMAC              H     S                     .050 MG/L              5
...................................................................................................................................
        METRIBUZIN
21087-64-9     EPA                    DW                     HA LIFE           H     S                     .875 MG/L             27
                                                             HA LIFE A         H     S                     .175 MG/L             27
                                                             HA1 C             H     S                    4.500 MG/L             27
                                                             HA10 C            H     S                    4.500 MG/L             27
                                                             HALT A            H     S                     .875 MG/L             27
                                                             HALT C            H     S                     .250 MG/L             27
               H&W                    DW                     MAC               H     S                     .080 MG/L              5
               NACA                   GW                     HGL               H     P                     .250 MG/L             22
...................................................................................................................................
        MINERAL OIL
               USSR                   DW                     MPC               A     S                     .100 MG/L             12
...................................................................................................................................
        MINERAL OILS
               EEC                    DW                     MADC              A     S                   10.000 UG/L              6
...................................................................................................................................
        MOLYBDENUM
7439-98-7      USSR                   DW                     MPC               H     S                     .500 MG/L             12
...................................................................................................................................
        MONOCHLOROBENZENE
108-90-7       EPA                    DW                     MCLG              H     P                     .060 MG/L              8
...................................................................................................................................
        MONOPROPYLAMINE
               USSR                   DW                     MPC               A     S                     .500 MG/L             12
...................................................................................................................................
        MONOSODIUMCYANURATE
               USSR                   DW                     MPC               A     S                   25.000 MG/L             12
...................................................................................................................................
        MONURON
150-68-5       USSR                   DW                     MPC               A     S                    5.000 MG/L             12
...................................................................................................................................
        N,N-DIMETHYL-PIPERINDINIUM CL.
               NACA                   GW                     HGL               H     P                    5.000 MG/L             22
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                             #######   PALIS SYSTEM PARAMETER REPORT---05/12/88   #######
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       CHEMICAL
       --------
CAS#          AGENCY               CATEGORY              LIMIT            LTYPE  STATUS           VALUE  UOM      REFCODE
----          ------               --------              -----            -----  ------           -----  ---      -------
       N-BUTYL ALCOHOL
71-36-3       USSR                 DW                    MPC              A      S                1.000  MG/L          12
--------------------------------------------------------------------------------------------------------------------------
       N-BUTYL PHTHALATE
              EPA                  DW                    SNAEL            H      S               38.500  UG/L          10
--------------------------------------------------------------------------------------------------------------------------
       N-NITROSO-DIPHENYLAMIDE
86-30-6       NEW YORK             AMBIENT               AWQS             H      P               14.000  UG/L          16
--------------------------------------------------------------------------------------------------------------------------
       NAPHTHALENE
91-20-3       NEW YORK             AMBIENT               AWQS             A      S               10.000  UG/L          16
--------------------------------------------------------------------------------------------------------------------------
       NAPHTHOL(1)
90-15-3       USSR                 DW                    MPC              A      S                 .100  MG/L          12
--------------------------------------------------------------------------------------------------------------------------
       NAPHTHOL(2)
135-19-3      USSR                 DW                    MPC              H      S                 .400  MG/L          12
--------------------------------------------------------------------------------------------------------------------------
       NAPHTHOL(ALPHA)
              USSR                 DW                    MPC              A      S                 .100  MG/L          12
--------------------------------------------------------------------------------------------------------------------------
       NAPROAMIDE
              NACA                 GW                    HGL              H      P                3.000  MG/L          22
--------------------------------------------------------------------------------------------------------------------------
       NIACINAMIDE
98-92-0       NEW YORK             AMBIENT               AWQS             H      S              500.000  UG/L          16
--------------------------------------------------------------------------------------------------------------------------
       NICKEL
7440-02-0     EEC                  DW                    MADC             H      S               50.000  UG/L           6
              EPA                  AMBIENT               AWQC             H      S               13.400  UG/L           9
                                   DW                    HA LIFE          H      S              350.000  UG/L           7
                                                         HA LIFE A        H      S              150.000  UG/L           7
                                                         HA1 C            H      S                1.000  MG/L           7
                                                         HA10 C           H      S            1,000.000  UG/L           7
                                                         HALT A           H      S                 .350  MG/L           7
                                                         HALT C           H      S                 .100  MG/L           7
--------------------------------------------------------------------------------------------------------------------------
       NITRALIN
              EPA                  DW                    SNAEL            H      S               35.000  UG/L          10
              NEW YORK             GW                    GWQS             H      S               35.000  UG/L          16
--------------------------------------------------------------------------------------------------------------------------
       NITRAPYRIN
              NACA                 GW                    HGL              H      P                 .015  MG/L          22
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                    #######  PALIS SYSTEM PARAMETER REPORT---05/12/88  #######
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       CHEMICAL
       --------
CAS#        AGENCY          CATEGORY        LIMIT        LTYPE STATUS        VALUE UOM      REFCODE
----        ------          --------        -----        ----- ------        ----- ---      -------
       NITRATE
            EPA             DW              HA10 C       H     S            10.000 MG/L ##        7
                                            MCLG         H     P            10.000 MG/L           8
            NEW YORK        AMBIENT         AWQS         H     S        10,000.000 UG/L          16
                            DW              MCL          H     S            10.000 MG/L          25
                            GW              GWQS         H     S            10.000 MG/L          16
-----------------------------------------------------------------------------------------------------
       NITRATE AS N
            EPA             DW              MCL          H     P            10.000 MG/L          13
            FLORIDA ST.     DW              MCL          H     S            10.000 MG/L           2
            H&W             DW              MAC          H     S            10.000 MG/L           5
            MOE             DW              MAC          H     S            10.000 MG/L           1
            USSR            DW              MPC          H     S            10.000 MG/L          12
            WHO             DW              GV           H     S            10.000 MG/L           4
-----------------------------------------------------------------------------------------------------
       NITRATE-NITROGEN
            NEW JERSEY      GW              GW1          A     S             2.000 MG/L          21
                                            GW2          A     S            10.000 MG/L          21
                                            GW3          A     S            10.000 MG/L          21
-----------------------------------------------------------------------------------------------------
       NITRATES
            EEC             DW              GL           A     S            25.000 MG/L           6
                                            MADC         A     S            50.000 MG/L           6
            EPA             AMBIENT         AWQC         H     S            10.000 MG/L           9
-----------------------------------------------------------------------------------------------------
       NITRILOTRIACETIC ACID(NTA)
139-13-9    H&W             DW              MAC          H     S              .050 MG/L           5
            MOE             DW              MAC          H     S              .050 MG/L           1
-----------------------------------------------------------------------------------------------------
       NITRITE
            EPA             DW              HA10 C       H     S             1.000 MG/L ##        7
                                            MCLG         H     P             1.000 MG/L           8
-----------------------------------------------------------------------------------------------------
       NITRITE AS N
            H&W             DW              MAC          H     S             1.000 MG/L           5
            MOE             DW              MAC          H     S             1.000 MG/L           1
-----------------------------------------------------------------------------------------------------
       NITRITES
            EEC             DW              MADC         A     S              .100 MG/L           6
-----------------------------------------------------------------------------------------------------
       NITROBENZENE
98-95-3     EPA             AMBIENT         AWQC         H     S            19.800 MG/L           9
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                        #######   PALIS SYSTEM PARAMETER REPORT---05/12/88   #######
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        CHEMICAL
        --------
 CAS#          AGENCY               CATEGORY             LIMIT            LTYPE  STATUS          VALUE  UOM         REFCODE
 ----          ------               --------             -----            -----  ------          -----  ---         -------
        NITROBENZENE
 98-95-3       NEW YORK             AMBIENT              AWQS               A     S             30.000  UG/L             16
               NIOSH                DW                   SNARL 1            H     S               .035  MG/L             24
                                                         SNARL 7            H     S               .005  MG/L             24
-----------------------------------------------------------------------------------------------------------------------------
        NITROCHLOROBENZENE
               USSR                 DW                   MPC                H     S               .050  MG/L             12
-----------------------------------------------------------------------------------------------------------------------------
        NITROCYCLOHEXANE
               USSR                 DW                   MPC                H     S               .100  MG/L             12
-----------------------------------------------------------------------------------------------------------------------------
        NITROPHENOL(ORTHO)
 88-75-5       USSR                 DW                   MPC                H     S               .060  MG/L             12
-----------------------------------------------------------------------------------------------------------------------------
        NITROPHENOL(PARA)
 100-02-7      USSR                 DW                   MPC                H     S               .020  MG/L             12
-----------------------------------------------------------------------------------------------------------------------------
        NITROPHENYLACETYLAMINOETHANOL(P)
               USSR                 DW                   MPC                A     S              1.000  MG/L             12
-----------------------------------------------------------------------------------------------------------------------------
        NITROPHENYLAMINOETHANOLOXYAM(P)
               USSR                 DW                   MPC                A     S               .500  MG/L             12
-----------------------------------------------------------------------------------------------------------------------------
        NITROPHENYLCHLOROMETHYLCARBIN(P)
               USSR                 DW                   MPC                A     S               .200  MG/L             12
-----------------------------------------------------------------------------------------------------------------------------
        NITROSAMINES
               EPA                  AMBIENT              AWQC               H     S               .800  NG/L **           9
-----------------------------------------------------------------------------------------------------------------------------
        NITROSODIBUTYLAMINE N
               EPA                  AMBIENT              AWQC               H     S              6.400  NG/L **           9
-----------------------------------------------------------------------------------------------------------------------------
        NITROSODIETHYLAMINE N
 55-18-5       EPA                  AMBIENT              AWQC               H     S               .800  NG/L **           9
-----------------------------------------------------------------------------------------------------------------------------
        NITROSODIMETHYLAMINE N
 62-75-9       EPA                  AMBIENT              AWQC               H     S              1.400  NG/L **           9
-----------------------------------------------------------------------------------------------------------------------------
        NITROSODIPHENYLAMINE N
               EPA                  AMBIENT              AWQC               H     S          4,900.000  NG/L **           9
-----------------------------------------------------------------------------------------------------------------------------
        NITROSOPYRROLIDINE N
               EPA                  AMBIENT              AWQC               H     S             16.000  NG/L **           9
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                  #######   PALIS SYSTEM PARAMETER REPORT---05/12/88   #######
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      CHEMICAL
      --------
CAS#         AGENCY              CATEGORY            LIMIT           LTYPE  STATUS          VALUE  UOM       REFCODE
----         ------              --------            -----           -----  ------          -----  ---       -------
      NONYL ALCOHOL
143-08-8     USSR                DW                  MPC               H      S              .010  MG/L           12
------------------------------------------------------------------------------------------------------------------------
      ODOUR
              NEW YORK           DW                  MCL               A      S             3.000  D#             25
             EEC                 DW                  GL                A      S              .000  D#              6
                                                     MADC              A      S             3.000  D#              6
             EPA                 DW                  SMCL              A      S             3.000  D#             28
------------------------------------------------------------------------------------------------------------------------
      ORGANIC NITROGEN
             MOE                 DW                  MDC               A      S              .150  MG/L ***        1
------------------------------------------------------------------------------------------------------------------------
      ORGANOPHOSPHORUS&CARBAMATE PESTI
             AWWA                DW                  ELLTC             H      P              .100  MG/L           23
                                                     ELSTC             H      P             2.000  MG/L           23
------------------------------------------------------------------------------------------------------------------------
      ORYZALIN
             NACA                GW                  HGL               H      P              .090  MG/L           22
------------------------------------------------------------------------------------------------------------------------
      OXAMYL
             EPA                 DW                  HA LIFE           H      S              .875  MG/L            7
                                                     HA LIFE A         H      S           175.000  UG/L            7
                                                     HA1 C             H      S              .175  MG/L            7
                                                     HA10 C            H      S              .175  MG/L            7
                                                     HALT A            H      S              .175  MG/L            7
             NACA                GW                  HGL               H      P              .250  MG/L           22
------------------------------------------------------------------------------------------------------------------------
      OXYDEMETON-METHYL
301-12-2     NACA                GW                  HGL               H      P              .050  MG/L           22
------------------------------------------------------------------------------------------------------------------------
      PARAQUAT
1910-42-5    EPA                 DW                  HA LIFE           H      S              .160  MG/L           27
                                                     HA LIFE A         H      S              .003  MG/L           27
                                                     HA1 C             H      S              .100  MG/L           27
                                                     HA10 C            H      S              .100  MG/L           27
                                                     HALT A            H      S              .160  MG/L           27
                                                     HALT C            H      S              .045  MG/L           27
                                                     SNAEL             H      S              .003  MG/L           10
             NEW                 DW                  IMAC              H      S              .010  MG/L            5
             NEW YORK            GW                  GUGS              H      S             2.900  UG/L           16
------------------------------------------------------------------------------------------------------------------------
      PARATHION
56-38-2      CALIFORNIA ST. DHS  DW                  AL                H      S              .030  MG/L            3
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                         #######   PALIS SYSTEM PARAMETER REPORT---05/12/88   #######
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        CHEMICAL
        --------
 CAS#         AGENCY               CATEGORY             LIMIT           LTYPE  STATUS          VALUE  UOM       REFCODE
 ----         ------               --------             -----           -----  ------          -----  ---       -------
        PARATHION
 56-38-2      H&W                  DW                   MAC               H      S              .050  MG/L            5
              MOE                  DW                   MAC               H      S              .035  MG/L            1
              USSR                 DW                   MPC               A      S              .003  MG/L           12
-----------------------------------------------------------------------------------------------------------------------
        PARATHION AND METHYL PARATHION
              EPA                  DW                   SNAEL             H      S             1.500  UG/L           10
              NEW YORK             GW                   GWQS              H      S             1.500  UG/L           16
-----------------------------------------------------------------------------------------------------------------------
        PCB
              NEW YORK             AMBIENT              AWQS              H      S              .010  UG/L           16
                                   DW                   ASL1              H      S             1.000  UG/L           26
                                                        ASL2              H      S              .100  UG/L           26
                                   GW                   GWQS              H      S              .100  UG/L           16
-----------------------------------------------------------------------------------------------------------------------
        PCB'S
              EPA                  AMBIENT              AWQC              H      S              .079  NG/L **         9
-----------------------------------------------------------------------------------------------------------------------
        PCB'S(POLYCHLORINATED BIPHENYLS)
              EPA                  DW                   MCLG              H      P              .000  MG/L            8
              MOE                  DW                   IMAC              H      S              .003  MG/L            1
              NEW JERSEY           GW                   GW1               A      S              .001  UG/L           21
                                                        GW2               A      S              .001  UG/L           21
                                                        GW3               A      S              .001  UG/L           21
-----------------------------------------------------------------------------------------------------------------------
        PCB(TETRACHLOROBIPHENYLS TOTAL)
              NAS                  DW                   SNARL 7           H      S            50.000  UG/L           11
-----------------------------------------------------------------------------------------------------------------------
        PCB(TRICHLOROBIPHENYLS TOTAL)
              NAS                  DW                   SNARL 7           H      S            50.000  UG/L           11
-----------------------------------------------------------------------------------------------------------------------
        PDB
              EPA                  DW                   SNAEL             H      S             4.700  UG/L           10
              NEW YORK             GW                   GWQS              H      S             4.700  UG/L           16
-----------------------------------------------------------------------------------------------------------------------
        PENTACHLOROBENZENE
              EPA                  AMBIENT              AWQC              H      S            74.000  UG/L            9
-----------------------------------------------------------------------------------------------------------------------
        PENTACHLOROBUTANE
              USSR                 DW                   MPC               A      S              .020  MG/L           12
-----------------------------------------------------------------------------------------------------------------------
        PENTACHLORONITROBENZENE
 82-68-8      CALIFORNIA ST. DHS   DW                   AL                H      S              .900  UG/L            3
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                               #######   PALIS SYSTEM PARAMETER REPORT---05/12/88   #######
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        CHEMICAL
        --------
  CAS#         AGENCY                CATEGORY              LIMIT            LTYPE  STATUS           VALUE UOM        REFCODE
  ----         ------                --------              -----            -----  ------           ----- ---        -------
        PENTACHLOROPHENOL
  87-86-5      CALIFORNIA ST. DHS    DW                    AL               H      S               30.000 UG/L             3
               EPA                   AMBIENT               AWQC             H      S                1.010 MG/L             9
                                     DW                    HA LIFE          H      S            1,050.000 UG/L             7
                                                           HA LIFE A        H      S              220.000 UG/L             7
                                                           HA1 C            H      S            1,000.000 UG/L             7
                                                           HA10 C           H      S              300.000 UG/L             7
                                                           HALT A           H      S            1,050.000 UG/L             7
                                                           HALT C           H      S              300.000 UG/L             7
                                                           MCLG             H      P                 .220 MG/L             8
                                                           SNAEL            H      S                1.050 UG/L            10
               H&W                   DW                    AO               A      S                 .030 MG/L             5
                                                           MAC              H      S                 .060 MG/L             5
               NAS                   DW                    SNARL CHR*       H      S               21.000 UG/L            11
               NEW YORK              GW                    GWQS             H      S               21.000 UG/L            16
               USSR                  DW                    MPC              A      S                 .300 MG/L            12
               WHO                   DW                    GV               H      S               10.000 UG/L             4
----------------------------------------------------------------------------------------------------------------------------
        PENTANATE
               USSR                  DW                    MPC              H      S                2.500 MG/L            12
----------------------------------------------------------------------------------------------------------------------------
        PESTICIDES
               EEC                   DW                    MADC             H      S                 .500 UG/L             6
               H&W                   DW                    MAC              H      S                 .100 MG/L             5
----------------------------------------------------------------------------------------------------------------------------
        PH
               EEC                   DW                    MADC             A      S                9.500 STDU             6
               EPA                   DW                    SMCL             A      S                6.500 STD U***        28
               H&W                   DW                    MAC              A      S                6.500 STDU ***         5
               NEW JERSEY            GW                    GW1              A      S                4.200 STDU            21
                                                           GW2              A      S                5.000 STDU            21
                                                           GW3              A      S                5.000 STDU            21
               NEW YORK              GW                    GWQS             H      S                6.500 STD U           16
               WHO                   DW                    GV               A      S                6.800 STDU ***        28
----------------------------------------------------------------------------------------------------------------------------
        PHENOL
  108-95-2     CALIFORNIA ST. DHS    DW                    AL               A      S                1.000 UG/L             3
               EPA                   AMBIENT               AWQC             H      S                3.500 MG/L             9
               NEW JERSEY            GW                    GW1              A      S                 .300 MG/L            21
                                                           GW2              A      S                3.500 MG/L            21
                                                           GW3              A      S                3.500 MG/L            21
               USSR                  DW                    MPC              A      S                 .001 MG/L            12
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                    #######   PALIS SYSTEM PARAMETER REPORT---05/12/88   #######
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       CHEMICAL
       --------
CAS#          AGENCY                CATEGORY          LIMIT            LTYPE  STATUS         VALUE  UOM        REFCODE
----          ------                --------          -----            -----  ------         -----  ---        -------
       PHENOL
108-95-2      USSR                  DW                MPC              H      S               .001  MG/L            12
-----------------------------------------------------------------------------------------------------------------------
       PHENOLIC COMPOUNDS
              NEW YORK              AMBIENT           AWQS             H      S              1.000  UG/L            16
-----------------------------------------------------------------------------------------------------------------------
       PHENOLS
              EEC                   DW                MADC             A      S               .500  UG/L             6
              MOE                   DW                MDC              A      S               .002  MG/L             1
              NEW YORK              GW                GWQS             H      S               .001  MG/L            16
-----------------------------------------------------------------------------------------------------------------------
       PHENYL ETHER
101-84-8      NEW YORK              AMBIENT           AWQS             A      S             10.000  UG/L            16
-----------------------------------------------------------------------------------------------------------------------
       PHENYLENEDIAMINE(PARA)
106-50-3      USSR                  DW                MPC              H      S               .100  MG/L            12
-----------------------------------------------------------------------------------------------------------------------
       PHENYLHYDRAZINE
100-63-0      USSR                  DW                MPC              H      S               .010  MG/L            12
-----------------------------------------------------------------------------------------------------------------------
       PHORATE
298-02-2      EPA                   DW                SNAEL            H      S               .035  UG/L            10
              H&W                   DW                IMAC             H      S               .002  MG/L             5
-----------------------------------------------------------------------------------------------------------------------
       PHOSBUTYL
              USSR                  DW                MPC              A      S               .030  MG/L            12
-----------------------------------------------------------------------------------------------------------------------
       PHOSMET
              NACA                  GW                HGL              H      P               .200  MG/L            22
-----------------------------------------------------------------------------------------------------------------------
       PHOSPHAMIDE
              USSR                  DW                MPC              A      S               .030  MG/L            12
-----------------------------------------------------------------------------------------------------------------------
       PHOSPHATE,TOTAL
              NEW JERSEY            GW                GW1              A      S               .700  MG/L            21
-----------------------------------------------------------------------------------------------------------------------
       PHOSPHORUS
7723-14-0     EEC                   DW                GL               A      S            400.000  UG/L             6
                                                      MADC             A      S          5,000.000  UG/L             6
-----------------------------------------------------------------------------------------------------------------------
       PHTHALOPHOS
              USSR                  DW                MPC              A      S               .200  MG/L            12
```

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CHEMICAL

CAS#	AGENCY	CATEGORY	LIMIT	LTYPE	STATUS	VALUE	UOM	REFCODE
PICHLORAM								
1918-02-1	NACA	GW	HGL	H	P	.250	MG/L	22
PICLORAM								
1918-02-01	EPA	DW	HA LIFE	H	S	2.450	MG/L	27
			HA LIFE A	H	S	.490	MG/L	27
			HA1 C	H	S	20.000	MG/L	27
			HA10 C	H	S	20.000	MG/L	27
			HALT A	H	S	2.450	MG/L	27
			HALT C	H	S	.700	MG/L	27
PICOLINE(ALPHA)								
109-06-8	USSR	DW	MPC	H	S	.050	MG/L	12
PICRIC ACID								
88-89-1	USSR	DW	MPC	A	S	.500	MG/L	12
POLYACRYLAMIDE								
	USSR	DW	MPC	H	S	2.000	MG/L	12
POLYCHLOROPINENE								
	USSR	DW	MPC	H	S	.200	MG/L	12
POLYCYCLIC AROMATIC HYDROCARBONS								
	EEC	DW	MADC	H	S	.200	UG/L	6
POLYETHYLHYDROSILOXANE								
	USSR	DW	MPC	A	S	10.000	MG/L	12
POLYETHYLSILOXANE								
	USSR	DW	MPC	A	S	10.000	MG/L	12
POLYMETHYLHYDROSILOXANE								
	USSR	DW	MPC	A	S	2.000	MG/L	12
POLYNUCLEAR AROMATIC HYDROCARBON								
	EPA	AMBIENT	AWQC	H	S	2.800	NG/L **	9
POTASSIUM								
7440-09-7	EEC	DW	GL	A	S	10.000	MG/L	6
			MADC	A	S	12.000	MG/L	6
POTASSIUM DIETHYLPHOSPHORODITHIO								
	USSR	DW	MPC	A	S	.500	MG/L	12

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                           #######   PALIS SYSTEM PARAMETER REPORT---05/12/88   #######
                            ----------------------------------------------------------


          CHEMICAL
          --------
  CAS#        AGENCY              CATEGORY            LIMIT           LTYPE  STATUS          VALUE  UOM         REFCODE
  ----        ------              --------            -----           -----  ------          -----  ---         -------
          POTASSIUM DIISOPROPYLDITHIOPHOS
              USSR                DW                  MPC               A      S              .020  MG/L             12
------------------------------------------------------------------------------------------------------------------------
          POTASSIUM PERMANGANATE
  7722-64-7   EEC                 DW                  GL                A      S             2.000  MG/L              6
                                                      MADC              A      S             5.000  MG/L              6
------------------------------------------------------------------------------------------------------------------------
          PROFENOFOS
              NACA                GW                  HGL               H      P              .005  MG/L             22
------------------------------------------------------------------------------------------------------------------------
          PROMETON
  1610-18-0   EPA                 DW                  HA LIFE           H      S              .525  MG/L             27
                                                      HA LIFE A         H      S              .100  MG/L             27
                                                      HA1 C             H      S              .150  MG/L             27
                                                      HA10 C            H      S              .150  MG/L             27
                                                      HALT C            H      S              .150  MG/L             27
------------------------------------------------------------------------------------------------------------------------
          PROMETRYNE
  7287-19-6   H&W                 DW                  IMAC              H      S              .001  MG/L              5
              NACA                GW                  HGL               H      P              .375  MG/L             22
              USSR                DW                  MPC               A      S             3.000  MG/L             12
------------------------------------------------------------------------------------------------------------------------
          PRONAMIDE
  23950-58-5  EPA                 DW                  HA LIFE           H      S             2.600  MG/L             27
                                                      HA LIFE A         H      S              .052  MG/L             27
                                                      HA1 C             H      S              .052  MG/L             27
                                                      HA10 C            H      S              .052  MG/L             27
------------------------------------------------------------------------------------------------------------------------
          PROPACHLOR
  1918-16-7   EPA                 DW                  HA LIFE           H      S              .460  MG/L             27
                                                      HA LIFE A         H      S              .092  MG/L             27
                                                      HA1 C             H      S              .500  MG/L             27
                                                      HA10 C            H      S              .500  MG/L             27
                                                      HALT A            H      S              .460  MG/L             27
                                                      HALT C            H      S              .130  MG/L             27
                                                      SNAEL             H      S              .035  MG/L             10
              NEW YORK            GW                  GWQS              H      S            35.000  UG/L             16
------------------------------------------------------------------------------------------------------------------------
          PROPANIL
  709-98-8    EPA                 DW                  SNAEL             H      S             7.000  UG/L             10
              NEW YORK            GW                  GWQS              H      S             7.000  UG/L             16
------------------------------------------------------------------------------------------------------------------------
          PROPAZIN
              USSR                DW                  MPC               A      S             1.000  MG/L             12
```

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                       #######   PALIS SYSTEM PARAMETER REPORT---05/12/88   #######
                        ------------------------------------------------------------


     CHEMICAL
     --------
CAS#      AGENCY           CATEGORY        LIMIT        LTYPE STATUS          VALUE  UOM       REFCODE
----      ------           --------        -----        ----- ------          -----  ---       -------
     PROPAZINE
139-40-2  EPA              DW              HA LIFE      H     S                .700  MG/L           27
                                           HA LIFE A    H     S                .014  MG/L           27
                                           HA1 C        H     S               1.000  MG/L           27
                                           HA10 C       H     S               1.000  MG/L           27
                                           HALT A       H     S               1.750  MG/L           27
                                           HALT C       H     S                .500  MG/L           27
                                           SNAEL        H     S              16.000  UG/L           10
          NEW YORK         GW              GWQS         H     S              16.000  UG/L           16
------------------------------------------------------------------------------------------------------
     PROPHAM
122-42-9  EPA              DW              HA LIFE      H     S                .595  MG/L           27
                                           HA LIFE A    H     S                .120  MG/L           27
                                           HA1 C        H     S               5.000  MG/L           27
                                           HA10 C       H     S               5.000  MG/L           27
                                           HALT A       H     S              17.500  MG/L           27
                                           HALT C       H     S               5.000  MG/L           27
------------------------------------------------------------------------------------------------------
     PROPOXUR
114-26-1  CALIFORNIA ST. DHS  DW           AL           H     S                .090  MG/L            3
          EPA              DW              HA LIFE      H     S                .140  MG/L           27
                                           HA LIFE A    H     S               3.000  UG/L           27
                                           HA1 C        H     S                .045  MG/L           27
                                           HA10 C       H     S                .040  MG/L           27
                                           HALT A       H     S             100.000  UG/L           27
                                           HALT C       H     S              40.000  UG/L           27
------------------------------------------------------------------------------------------------------
     PROPYLBENZENE
103-65-1  USSR             DW              MPC          A     S                .200  MG/L           12
------------------------------------------------------------------------------------------------------
     PROPYLENE
115-07-1  USSR             DW              MPC          A     S                .500  MG/L           12
------------------------------------------------------------------------------------------------------
     PYRIDINE
110-86-1  USSR             DW              MPC          H     S                .200  MG/L           12
------------------------------------------------------------------------------------------------------
     QUINONE DIOXAME(PARA)
          USSR             DW              MPC          H     S                .100  MG/L           12
------------------------------------------------------------------------------------------------------
     RADIUM 226 + RADIUM 228
          EPA              DW              MCL          H     S               5.000  PCI/L          28
          NEW YORK         AMBIENT         AWQS         H     S               5.000  PCI/L          16
```

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CAS#	CHEMICAL	AGENCY	CATEGORY	LIMIT	LTYPE	STATUS	VALUE	UOM	REFCODE
	RADIUM-226								
		H&W	DW	MAC	H	S	1.000	BECQ/L	5
		MOE	DW	MAC	H	S	1.000	BECQ/L	1
		NEW YORK	AMBIENT	AWQS	H	S	3.000	PCI/L	16
	SAPONIN								
		USSR	DW	MPC	A	S	.200	MG/L	12
	SELENIUM								
7782-49-2		EEC	DW	MADC	H	S	10.000	UG/L	6
		EPA	AMBIENT	AWQC	H	S	10.000	UG/L	9
			DW	MCL	H	P	.010	MG/L	13
				MCLG	H	P	.045	MG/L	8
		FLORIDA ST.	DW	MCL	H	S	.010	MG/L	2
		H&W	DW	MAC	H	S	.010	MG/L	5
		MOE	DW	MAC	H	S	.010	MG/L	1
		NEW YORK	AMBIENT	AWQS	H	S	10.000	UG/L	16
			DW	MCL	H	S	.010	MG/L	25
			GW	GWQS	H	S	.020	MG/L	16
		USSR	DW	MPC	H	S	.001	MG/L	12
		WHO	DW	GV	H	S	.010	MG/L	4
	SELENIUM AND COMPOUNDS								
7782-49-2+		NEW JERSEY	GW	GW2	A	S	.010	MG/L	21
				GW3	A	S	.010	MG/L	21
	SETHOXYDIM								
		NACA	GW	HGL	H	P	1.800	MG/L	22
	SILVER								
7440-22-4		EEC	DW	MADC	A	S	10.000	UG/L	6
		EPA	AMBIENT	AWQC	H	S	50.000	UG/L	9
			DW	MCL	H	P	.050	MG/L	13
		FLORIDA ST.	DW	MCL	H	S	.050	MG/L	2
		MOE	DW	MAC	H	S	.050	MG/L	1
		NEW YORK	AMBIENT	AWQS	H	S	50.000	UG/L	16
			DW	MCL	H	S	.050	MG/L	25
			GW	GWQS	H	S	.050	MG/L	16
	SILVER AND COMPOUNDS								
7440-22-4+		NEW JERSEY	GW	GW1	A	S	.050	MG/L	21
				GW2	A	S	.050	MG/L	21

####### PALIS SYSTEM PARAMETER REPORT---05/12/88 #######

CHEMICAL CAS#	AGENCY	CATEGORY	LIMIT	LTYPE	STATUS	VALUE	UOM	REFCODE
SILVER AND COMPOUNDS								
7440-22-4+	NEW JERSEY	GW	GW3	A	S	.050	MG/L	21
SIMAZINE								
122-34-9	EPA	DW	HA LIFE	H	S	175.000	UG/L	27
			HA LIFE A	H	S	35.000	UG/L	27
			HA1 C	H	S	50.000	UG/L	27
			HA10 C	H	S	50.000	UG/L	27
			HALT A	H	S	175.000	UG/L	27
			HALT C	H	S	50.000	UG/L	27
			SNAEL	H	S	75.250	UG/L	10
	H&W	DW	IMAC	H	S	.010	MG/L	5
	NACA	GW	HGL	H	P	.500	MG/L	22
	NAS	DW	SNARL CHR*	H	S	1,505.000	UG/L	11
	NEW YORK	GW	GWOS	H	S	75.250	UG/L	16
	USSR	DW	MPC	A	S	.000	MG/L	12
SIMAZINE(2-OXYDERIVATIVE)								
	USSR	DW	MPC	A	S	.000	MG/L	12
SIMAZINE(PLUS D-ETHYL SIMAZINE)								
	H&W CANADA	DW	IDWG	H	T	.010	MG/L	17
SODIUM								
7440-23-5	EEC	DW	GL	A	S	20.000	MG/L	6
			MADC	A	S	150.000	MG/L	6
	FLORIDA ST.	DW	MCL	H	S	160.000	MG/L	2
	NEW JERSEY	GW	GW1	A	S	10.000	MG/L	21
			GW2	A	S	50.000	MG/L	21
	WHO	DW	GV	A	S	200.000	MG/L	4
SODIUM ADIPATE								
	USSR	DW	MPC	H	S	1.000	MG/L	12
SODIUM CHLORATE								
7775-09-9	USSR	DW	MPC	A	S	20.000	MG/L	12
SODIUM DICHLOROPHENOXYACETATE								
	USSR	DW	MPC	A	S	1.000	MG/L	12
SODIUM ETHYLSILICONATE								
	USSR	DW	MPC	A	S	2.000	MG/L	12

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                                  #######   PALIS SYSTEM PARAMETER REPORT---05/12/88   #######
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         CHEMICAL
         --------
  CAS#          AGENCY                CATEGORY              LIMIT            LTYPE  STATUS            VALUE  UOM       REFCODE
  ----          ------                --------              -----            -----  ------            -----  ---       -------
         SODIUM METHYLSILICONATE
                USSR                  DW                    MPC              A      S                 2.000  MG/L           12
--------------------------------------------------------------------------------------------------------------------------------
         SODIUM PENTACHLOROPHENOLATE
                USSR                  DW                    MPC              A      S                 5.000  MG/L           12
--------------------------------------------------------------------------------------------------------------------------------
         SODIUM VINYLSILICONATE
                USSR                  DW                    MPC              A      S                 2.000  MG/L           12
--------------------------------------------------------------------------------------------------------------------------------
         SOLIDS DISSOLVED AND SALINITY
                EPA                   AMBIENT               AWQC             H      S               250.000  MG/L            9
--------------------------------------------------------------------------------------------------------------------------------
         SOLIDS TOTAL DISSOLVED
                WHO                   DW                    GV               A      S             1,000.000  MG/L            4
--------------------------------------------------------------------------------------------------------------------------------
         STRONTIUM
  7440-24-6     USSR                  DW                    MPC              H      S                 2.000  MG/L           12
--------------------------------------------------------------------------------------------------------------------------------
         STRONTIUM-90
                FLORIDA ST.           DW                    MCL              H      S                 8.000  PCI/L           2
                H&W                   DW                    MAC              H      S                10.000  BECQ/L          5
                MOE                   DW                    MAC              H      S                10.000  BECQ/L          1
                NEW YORK              AMBIENT               AWQS             H      S                 8.000  PCI/L          16
--------------------------------------------------------------------------------------------------------------------------------
         STYRENE
  100-42-5      EPA                   DW                    HA LIFE          H      S             7,000.000  UG/L            7
                                                            HA LIFE A        H      S               140.000  UG/L            7
                                                            HA1 C            H      S            22,500.000  UG/L            7
                                                            HA10 C           H      S             2,000.000  UG/L            7
                                                            HALT A           H      S             7,000.000  UG/L            7
                                                            HALT C           H      S             2,000.000  UG/L            7
                                                            MCLG             H      P                  .140  MG/L            8
                                                            SNAEL            H      S                46.500  UG/L           10
                NEW YORK              AMBIENT               AWQS             A      S                50.000  UG/L           16
                                      GW                    GWQS             H      S               931.000  UG/L           16
                USSR                  DW                    MPC              A      S                  .100  MG/L           12
--------------------------------------------------------------------------------------------------------------------------------
         SULFATE
                EPA                   DW                    SMCL             A      S               250.000  MG/L           28
                NEW JERSEY            GW                    GW1              A      S                15.000  MG/L           21
                                                            GW2              A      S               250.000  MG/L           21
                NEW YORK              AMBIENT               AWQS             H      S           250,000.000  UG/L           16
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                 #######   PALIS SYSTEM PARAMETER REPORT---05/12/88   #######
                   -----------------------------------------------------------

      CHEMICAL
      --------
 CAS#          AGENCY                  CATEGORY             LIMIT            LTYPE  STATUS            VALUE  UOM          REFCODE
 ----          ------                  --------             -----            -----  ------            -----  ---          -------
      SULFATE
               NEW YORK                DW                   MAC              A      S               250.000  MG/L              25
                                       GW                   GWQS             H      S               250.000  MG/L              16
               WHO                     DW                   GV               A      S               400.000  MG/L               4
-------------------------------------------------------------------------------------------------------------------------------
      SULPHATE
               H&W                     DW                   AO               A      S               150.000  MG/L               5
                                                            MAC              H      S               500.000  MG/L               5
               MOE                     DW                   MDC              A      S               500.000  MG/L               1
-------------------------------------------------------------------------------------------------------------------------------
      SULPHATES
               EEC                     DW                   GL               A      S                25.000  MG/L               6
                                                            MADC             A      S               250.000  MG/L               6
-------------------------------------------------------------------------------------------------------------------------------
      SULPHIDE
               H&W                     DW                   AO               A      S                  .050  MG/L               5
-------------------------------------------------------------------------------------------------------------------------------
      SURFACTANTS
               EEC                     DW                   MADC             A      S                  .200  MG/L               6
-------------------------------------------------------------------------------------------------------------------------------
      TASTE
               EEC                     DW                   GL               A      S                  .000  D#                 6
                                                            MADC             A      S                 3.000  D#                 6
-------------------------------------------------------------------------------------------------------------------------------
      TEBUTHIURON
 34014-18-1    EPA                     DW                   HA LIFE          H      S                 1.750  MG/L              27
                                                            HA LIFE A        H      S                  .350  MG/L              27
                                                            HA1 C            H      S                 2.500  MG/L              27
                                                            HA10 C           H      S                 2.500  MG/L              27
                                                            HALT A           H      S                  .438  MG/L              27
                                                            HALT C           H      S                  .125  MG/L              27
               NACA                    GW                   MCL              H      P                 2.000  MG/L              22
-------------------------------------------------------------------------------------------------------------------------------
      TELLURIUM
 13494-80-9    USSR                    DW                   MPC              H      S                  .010  MG/L              12
-------------------------------------------------------------------------------------------------------------------------------
      TEMEPHOS
               H&W                     DW                   IMAC             H      S                  .280  MG/L               5
-------------------------------------------------------------------------------------------------------------------------------
      TEMPERATURE
               EEC                     DW                   GL               A      S                12.000  DEG C              6
                                                            MADC             A      S                25.000  DEG C              6
```

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                    #######  PALIS SYSTEM PARAMETER REPORT---05/12/88   #######
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        CHEMICAL
        --------
 CAS#          AGENCY               CATEGORY             LIMIT            LTYPE  STATUS          VALUE  UOM        REFCODE
 ----          ------               --------             -----            -----  ------          -----  ---        -------
        TEMPERATURE
               H&W                  DW                   AO               A      S              15.000  DEG C            5
               MOE                  DW                   MDC              A      S              15.000  DEG C            1
---------------------------------------------------------------------------------------------------------------------------
        TERBACIL
 5902-51-2     EPA                  DW                   HA LIFE          H      S                .440  MG/L            27
                                                         HA LIFE A        H      S                .090  MG/L            27
                                                         HA1 C            H      S                .240  MG/L            27
                                                         HA10 C           H      S                .250  MG/L            27
                                                         HALT A           H      S                .875  MG/L            27
                                                         HALT C           H      S                .250  MG/L            27
               NACA                 GW                   HGL              H      P                .125  MG/L            22
---------------------------------------------------------------------------------------------------------------------------
        TERBUFOS
 13071-79-9    EPA                  DW                   HA LIFE          H      S                .880  UG/L            27
                                                         HA LIFE A        H      S                .180  UG/L            27
                                                         HA1 C            H      S               5.000  UG/L            27
                                                         HA10 C           H      S               5.000  UG/L            27
                                                         HALT A           H      S                .880  UG/L            27
                                                         HALT C           H      S                .250  UG/L            27
               H&W                  DW                   IMAC             H      S                .001  MG/L             5
---------------------------------------------------------------------------------------------------------------------------
        TETRACHLOROBENZENE
               USSR                 DW                   MPC              H      S                .010  MG/L            12
---------------------------------------------------------------------------------------------------------------------------
        TETRACHLOROBENZENE(1,2,4,5)
               EPA                  AMBIENT              AWQC             H      S              38.000  UG/L             9
---------------------------------------------------------------------------------------------------------------------------
        TETRACHLOROBENZENES
               NEW YORK             AMBIENT              AWQS             A      S              10.000  UG/L            16
---------------------------------------------------------------------------------------------------------------------------
        TETRACHLOROETHANE
               USSR                 DW                   MPC              A      S                .200  MG/L            12
---------------------------------------------------------------------------------------------------------------------------
        TETRACHLOROETHANE(1,1,2,2)
 79-34-5       EPA                  AMBIENT              AWQC             H      S                .170  UG/L             9
---------------------------------------------------------------------------------------------------------------------------
        TETRACHLOROETHYLENE
 127-18-4      CALIFORNIA ST. DHS   DW                   AL               H      S               4.000  UG/L             3
               EPA                  AMBIENT              AWQC             H      S                .800  UG/L **          9
                                    DW                   DWEL             H      S                .500  MG/L             7
                                                         HA LIFE A        H      S              10.000  MG/L             7
```

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CHEMICAL	CAS#	AGENCY	CATEGORY	LIMIT	LTYPE	STATUS	VALUE	UOM	REFCODE
TETRACHLOROETHYLENE	127-18-4	EPA	DW	HA1 C	H	S	2.000	MG/L	7
				HA10 C	H	S	2.000	MG/L	7
				HALT A	H	S	5.000	MG/L	7
				HALT C	H	S	1.400	MG/L	7
		FLORIDA ST.	DW	MCL	H	S	3.000	UG/L	2
		NAS	DW	SNARL 7	H	S	24,500.000	UG/L	11
				SNARL CHR	H	S	7.140	UG/L **	11
		WHO	DW	TGV	H	S	10.000	UG/L	4
TETRACHLOROHEPTANE		USSR	DW	MPC	A	S	.002	MG/L	12
TETRACHLORONONANE		USSR	DW	MPC	A	S	.003	MG/L	12
TETRACHLOROPENTANE		USSR	DW	MPC	A	S	.005	MG/L	12
TETRACHLOROPHENOL(2,3,4,6)		H&W	DW	AO	A	S	.001	MG/L	5
				MAC	H	S	.100	MG/L	5
TETRACHLOROPROPANE		USSR	DW	MPC	A	S	.010	MG/L	12
TETRACHLOROUNDECANE		USSR	DW	MPC	A	S	.007	MG/L	12
TETRAETHYL TIN		USSR	DW	MPC	H	S	.200	UG/L	12
TETRAHYDROQUINONE		USSR	DW	MPC	A	S	.050	MG/L	12
TETRANITROMETHANE	509-14-8	USSR	DW	MPC	A	S	.500	MG/L	12
THALLIUM	7440-28-0	EPA	AMBIENT	AWQC	H	S	13.000	UG/L	9
THEOPHYLLINE	58-55-9	NEW YORK	AMBIENT	AWQS	H	S	40.000	UG/L	16

	CHEMICAL							
CAS#	AGENCY	CATEGORY	LIMIT	LTYPE	STATUS	VALUE	UOM	REFCODE
	THIOCYANATES							
	USSR	DW	MPC	H	S	.100	MG/L	12
	THIODICARB							
	NACA	GW	HGL	H	P	.300	MG/L	22
	THIOPHENE							
110-02-1	USSR	DW	MPC	A	S	2.000	MG/L	12
	THIRAM							
137-26-8	EPA	DW	SNAEL	H	S	1.750	UG/L	10
	NEW YORK	GW	GWQS	H	S	1.750	UG/L	16
	TOLUENE							
108-88-3	CALIFORNIA ST. DHS	DW	AL	H	S	100.000	UG/L	3
	EPA	AMBIENT	AWQC	H	S	14.300	MG/L	9
		DW	HA LIFE	H	S	12,100.000	UG/L	7
			HA LIFE A	H	S	2,420.000	UG/L	7
			HA1 C	H	S	21,500.000	UG/L	7
			HA10 C	H	S	3,460.000	UG/L	7
			HALT C	H	S	3,460.000	UG/L	7
			MCLG	H	P	2.000	MG/L	8
	H&W	DW	AO	A	S	.024	MG/L	5
	NAS	DW	SNARL 7	H	S	35,000.000	UG/L	11
			SNARL CHR	H	S	340.000	UG/L	11
	USSR	DW	MPC	A	S	.500	MG/L	12
	TOTAL COLIFORMS							
	EEC	DW	MADC	H	S	.000	COUNT/ML	6
	NEW JERSEY	GW	GW1	A	S	.040	COUNT/ML	21
	TOTAL DISSOLVED SOLIDS							
	EPA	DW	SMCL	A	S	500.000	MG/L	28
	H&W	DW	AO	A	S	500.000	MG/L	5
	MOE	DW	MDC	A	S	500.000	MG/L	1
	NEW JERSEY	GW	GW1	A	S	100.000	MG/L	21
			GW2	A	S	500.000	MG/L	21
	TOTAL ORGANIC CARBON							
	MOE	DW	MDC	A	S	5.000	MG/L	1
	TOXAPHENE							
8001-35-2	AWWA	DW	ELLTC	H	P	.005	MG/L	23

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                              #######   PALIS SYSTEM PARAMETER REPORT---05/12/88   #######
                               -----------------------------------------------------


      CHEMICAL
      --------
CAS#         AGENCY              CATEGORY             LIMIT          LTYPE  STATUS           VALUE  UOM     REFCODE
----         ------              --------             -----          -----  ------           -----  ---     -------
      TOXAPHENE
8001-35-2    AWWA                DW                   ELSTC          H      P                1.400  MG/L         23
             EPA                 AMBIENT              AWQC           H      S                 .710  MG/L **       9
                                 DW                   DWEL           H      S              112.000  UG/L          7
                                                      HA1 C          H      S              500.000  UG/L          7
                                                      HA10 C         H      S               40.000  UG/L          7
                                                      MCL            H      S                 .005  MG/L         13
                                                      MCLG           H      P                 .000  MG/L          8
                                                      SNAEL          H      S                 .440  UG/L         10
             FLORIDA ST.         DW                   MCL            H      S                 .005  MG/L          2
             MOE                 DW                   MAC            H      S                 .005  MG/L          1
             NEW JERSEY          GW                   GW1            A      S                 .005  UG/L         21
                                                      GW2            A      S                 .005  UG/L         21
                                                      GW3            A      S                 .005  UG/L         21
             NEW YORK            DW                   MCL            H      S                5.000  UG/L         25
....................................................................................................................
      TRIADIMEFON
             NACA                GW                   HGL            H      P                 .250  MG/L         22
....................................................................................................................
      TRIALLATE
             H&W                 DW                   MAC            H      S                 .230  MG/L          5
....................................................................................................................
      TRIBUTYL PHOSPHATE
126-73-8     USSR                DW                   MPC            A      S                 .010  MG/L         12
....................................................................................................................
      TRICHLORFON
52-68-6      NACA                GW                   HGL            H      P                1.250  MG/L         22
....................................................................................................................
      TRICHLOROBENZENE(1,2,4)
             NEW YORK            AMBIENT              AWQS           A      S               10.000  UG/L         16
....................................................................................................................
      TRICHLOROBENZENES
             NEW YORK            AMBIENT              AWQS           A      S               10.000  UG/L         16
             USSR                DW                   MPC            H      S               30.000  MG/L         12
....................................................................................................................
      TRICHLOROETHANE(1,1,1)
71-55-6      CALIFORNIA ST. DHS  DW                   SNAEL          H      S            1,000.000  UG/L          3
             EPA                 AMBIENT              AWQC           H      S               18.400  MG/L          9
                                 DW                   HA LIFE        H      S            1,000.000  UG/L          7
                                                      HA LIFE A      H      S              200.000  UG/L          7
                                                      HA1 C          H      S      140,000,000.000  UG/L          7
                                                      HA10 C         H      S       35,000,000.000  UG/L          7
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                                #######   PALIS SYSTEM PARAMETER REPORT---05/12/88   #######
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         CHEMICAL
         --------
  CAS#          AGENCY                CATEGORY              LIMIT            LTYPE  STATUS           VALUE  UOM          REFCODE
  ----          ------                --------              -----            -----  ------           -----  ---          -------
         TRICHLOROETHANE(1,1,1)
  71-55-6       EPA                   DW                    HALT A           H      S          125,000.000  UG/L               7
                                                            HALT C           H      S           35,000.000  UG/L               7
                                                            MCL              H      S              200.000  UG/L              20
                                                            MCLG             H      S              200.000  UG/L               8
                FLORIDA ST.           DW                    MCL              H      S              200.000  UG/L               2
-----------------------------------------------------------------------------------------------------------------------------
         TRICHLOROETHANE(1,1,2)
  79-00-5       EPA                   AMBIENT               AWQC             H      S                 .600  UG/L **            9
                NEW YORK              AMBIENT               AWQS             H      S                 .600  UG/L              16
-----------------------------------------------------------------------------------------------------------------------------
         TRICHLOROETHYLENE
  79-01-6       CALIFORNIA ST. DHS    DW                    AL               H      S                5.000  UG/L               3
                EPA                   AMBIENT               AWQC             H      S                2.700  UG/L **            9
                                      DW                    HA LIFE          H      S              260.000  UG/L               7
                                                            MCL              H      S                5.000  UG/L              20
                                                            MCLG             H      S                 .000  UG/L               8
                FLORIDA ST.           DW                    MCL              H      S                3.000  UG/L               2
                NAS                   DW                    SNARL 7          H      S           15,000.000  UG/L              11
                NEW YORK              GW                    GWQS             H      S               10.000  UG/L              16
                USSR                  DW                    MPC              A      S                 .500  MG/L              12
                WHO                   DW                    TGV              H      S                 .030  MG/L               4
-----------------------------------------------------------------------------------------------------------------------------
         TRICHLOROMETAPHOS-3
                USSR                  DW                    MPC              A      S                 .400  MG/L              12
-----------------------------------------------------------------------------------------------------------------------------
         TRICHLOROPHENOL
                USSR                  DW                    MPC              A      S                 .400  UG/L              12
-----------------------------------------------------------------------------------------------------------------------------
         TRICHLOROPHENOL(2,4,5)
  95-95-4       EPA                   AMBIENT               AWQC             H      S            2,600.000  UG/L               9
-----------------------------------------------------------------------------------------------------------------------------
         TRICHLOROPHENOL(2,4,6)
  88-06-2       EPA                   AMBIENT               AWQC             H      S                1.200  UG/L **            9
                H&W                   DW                    AO               A      S                 .002  MG/L               5
                                                            MAC              H      S                 .005  MG/L               5
                NIOSH                 DW                    SNARL 1          H      S               17.500  MG/L              24
                WHO                   DW                    GV               A      S               10.000  UG/L               4
                                                                             H      S               10.000  UG/L               4
-----------------------------------------------------------------------------------------------------------------------------
         TRICHLOROPROPANE(1,2,3)
  96-18-4       HAWAII                GW                    LTAL             H      P            2,000.000  NG/L              19
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                    #######  PALIS SYSTEM PARAMETER REPORT---05/12/88  #######
                    ----------------------------------------------------------


      CHEMICAL
      --------
CAS#        AGENCY              CATEGORY            LIMIT           LTYPE  STATUS        VALUE  UOM       REFCODE
----        ------              --------            -----           -----  ------        -----  ---       -------
      TRICHLOROPROPANE(1,2,3)
96-18-4     HAWAII              GW                  LTG               H      P         800.000  NG/L           19
                                                    STAL              H      P       8,000.000  NG/L           19
---------------------------------------------------------------------------------------------------------------------
      TRICLOPYR
            NACA                GW                  HGL               H      P            .250  MG/L           22
---------------------------------------------------------------------------------------------------------------------
      TRIETHANOLAMINE
102-71-6    USSR                DW                  MPC               A      S           1.400  MG/L           12
---------------------------------------------------------------------------------------------------------------------
      TRIETHYLAMINE
121-44-8    USSR                DW                  MPC               H      S           2.000  MG/L           12
---------------------------------------------------------------------------------------------------------------------
      TRIFLUOROCHLOROPROPANE
            USSR                DW                  MPC               H      S            .100  MG/L           12
---------------------------------------------------------------------------------------------------------------------
      TRIFLURALIN
1582-09-8   EPA                 DW                  HA LIFE           H      S          87.000  UG/L           27
                                                    HA LIFE A         H      S           2.000  UG/L           27
                                                    HA1 C             H      S            .025  MG/L           27
                                                    HA10 C            H      S            .025  MG/L           27
                                                    HALT C            H      S            .025  MG/L           27
                                                    SNAEL             H      S            .035  MG/L           10
            NACA                GW                  HGL               H      P           1.000  MG/L           22
            NEW YORK            GW                  GWQS              H      S          35.000  UG/L           16
---------------------------------------------------------------------------------------------------------------------
      TRIHALOMETHANES
            CALIFORNIA ST. DHS  DW                  MCL               H      S            .100  MG/L *          3
            EPA                 DW                  MCL               H      S            .100  MG/L *         13
            FLORIDA ST.         DW                  MCL               H      S            .100  MG/L *          2
            H&W                 DW                  MAC               H      S            .350  MG/L *          5
            MOE                 DW                  MAC               H      S            .350  MG/L *          1
---------------------------------------------------------------------------------------------------------------------
      TRINITROMETHANE
517-25-9    USSR                DW                  MPC               A      S            .010  MG/L           12
---------------------------------------------------------------------------------------------------------------------
      TRINITROPHENOL
            NIOSH               DW                  SNARL 1           H      S           4.900  MG/L           24
                                                    SNARL 7           H      S            .200  MG/L           24
---------------------------------------------------------------------------------------------------------------------
      TRINITROTOLUENE
118-96-7    AWWA                DW                  ELLIC             H      P            .005  MG/L           23
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PALIS SYSTEM PARAMETER REPORT---05/12/88

CHEMICAL								
CAS#	AGENCY	CATEGORY	LIMIT	LTYPE	STATUS	VALUE	UOM	REFCODE
TRINITROTOLUENE								
118-96-7	AWWA	DW	ELSTC	H	P	.750	MG/L	23
TRITIUM								
10028-17-8	FLORIDA ST.	DW	MCL	H	S	20,000.000	PCI/L	2
	H&W	DW	MAC	H	S	40,000.000	BECQ/L	5
	MOE	DW	MAC	H	S	40,000.000	BECQ/L	1
	NEW YORK	AMBIENT	AWQS	H	S	20,000.000	PCI/L	16
TUNGSTEN								
7440-33-7	USSR	DW	MPC	H	S	.100	MG/L	12
TURBIDITY								
	EEC	DW	GL	A	S	1.000	MG/L	6
			MADC	A	S	10.000	MG/L	6
	EPA	DW	MCL	H	S	1.500	NTU	28
			MCLG	H	P	.100	NTU	8
	H&W	DW	AO	A	S	5.000	NTU	5
			MAC	H	S	1.000	NTU	5
	MOE	DW	MAC	H	S	1.000	FTU	1
	WHO	DW	GV	A	S	5.000	NTU	4
TURPENTINE								
	USSR	DW	MPC	A	S	.200	MG/L	12
URANIUM								
7440-61-1	H&W	DW	MAC	H	S	.100	MG/L	5
	MOE	DW	IMAC	H	S	.020	MG/L	1
UROTROPIN								
	USSR	DW	MPC	H	S	.500	MG/L	12
VANADIUM								
7440-62-2	USSR	DW	MPC	H	S	.100	MG/L	12
VINCLOZOLIN								
	NACA	GW	HGL	H	P	2.430	MG/L	22
VINYL ACETATE								
108-05-4	USSR	DW	MPC	H	S	.200	MG/L	12
VINYL CHLORIDE								
75-01-4	CALIFORNIA ST. DHS	DW	AL	H	S	2.000	UG/L	3

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                 #######  PALIS SYSTEM PARAMETER REPORT---05/12/88  #######
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      CHEMICAL
      --------
CAS#         AGENCY                 CATEGORY             LIMIT            LTYPE  STATUS        VALUE  UOM         REFCODE
----         ------                 --------             -----            -----  ------        -----  ---         -------
      VINYL CHLORIDE
75-01-4      EPA                    AMBIENT              AWQC               H      S           2.000  UG/L **           9
                                    DW                   HA1 C              H      S       2,600.000  UG/L              7
                                                         HA10 C             H      S       2,600.000  UG/L              7
                                                         HALT A             H      S          46.000  UG/L              7
                                                         HALT C             H      S          13.000  UG/L              7
                                                         MCL                H      S           2.000  UG/L             20
                                                         MCLG               H      S            .000  UG/L              8
             FLORIDA ST.            DW                   MCL                H      S           1.000  UG/L              2
             NAS                    DW                   SNARL CHR          H      S           1.960  UG/L **          11
             NEW YORK               DW                   ASL1               H      S           5.000  UG/L             26
                                                         ASL2               H      S           1.000  UG/L             26
                                    GW                   GWQS               H      S           5.000  UG/L             16
.........................................................................................................................
      XYLENE
1330-20-7    EPA                    DW                   HA LIFE            H      S       2,200.000  UG/L              7
                                                         HA LIFE A          H      S         400.000  UG/L              7
                                                         HA1 C              H      S      12,000.000  UG/L              7
                                                         HA10 C             H      S       7,800.000  UG/L              7
                                                         HALT A             H      S      27,300.000  UG/L              7
                                                         HALT C             H      S       7,800.000  UG/L              7
                                                         MCLG               H      P            .440  MG/L              8
             NEW YORK               DW                   ASL1               H      S          50.000  UG/L             26
                                                         ASL2               H      S          10.000  UG/L             26
             USSR                   DW                   MPC                A      S            .050  MG/L             12
.........................................................................................................................
      XYLENE(META)
108-38-3     CALIFORNIA ST. DHS     DW                   AL                 H      S            .620  MG/L              3
.........................................................................................................................
      XYLENE(ORTHO)
95-47-6      CALIFORNIA ST. DHS     DW                   AL                 H      S            .620  MG/L              3
.........................................................................................................................
      XYLENE(PARA)
106-42-3     CALIFORNIA ST. DHS     DW                   AL                 H      S            .620  MG/L              3
.........................................................................................................................
      XYLENES
             N&W                    DW                   AO                 A      S            .300  MG/L              5
.........................................................................................................................
      ZINC
7440-66-6    EEC                    DW                   GL                 A      S         100.000  UG/L              6
             EPA                    DW                   SMCL               A      S           5.000  MG/L             28
             N&W                    DW                   AO                 A      S           5.000  MG/L              5
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                          #######   PALIS SYSTEM PARAMETER REPORT---05/12/88   #######
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         CHEMICAL
         --------
  CAS#          AGENCY              CATEGORY            LIMIT            LTYPE  STATUS           VALUE  UOM        REFCODE
  ----          ------              --------            -----            -----  ------           -----  ---        -------
         ZINC
  7440-66-6     MOE                 DW                  MDC               A      S               5.000  MG/L             1
                NEW YORK            AMBIENT             AWQS              H      S             300.000  UG/L            16
                                    DW                  MAC               A      S               5.000  MG/L            25
                                    GW                  GWQS              H      S               5.000  MG/L            16
                USSR                DW                  MPC               H      S               1.000  MG/L            12
                WHO                 DW                  GV                A      S               5.000  MG/L             4
------------------------------------------------------------------------------------------------------------------------
         ZINC AND COMPOUNDS
  7440-66-6+    NEW JERSEY          GW                  GW1               A      S               5.000  MG/L            21
                                                        GW2               A      S               5.000  MG/L            21
                                                        GW3               A      S               5.000  MG/L            21
------------------------------------------------------------------------------------------------------------------------
         ZINEB
                NEW YORK            GW                  GWQS              H      S               1.750  UG/L            16
------------------------------------------------------------------------------------------------------------------------
         ZIRAM
                NEW YORK            GW                  GWQS              H      S               4.180  UG/L            16
------------------------------------------------------------------------------------------------------------------------
         ZIRAM(AND FERBAM)
                EPA                 DW                  SNAEL             H      S                .004  MG/L            10
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                    #######   PALIS SYSTEM ALIAS REPORT---04/18/88   #######
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PARM                                CAS          FULLNAME                        SYN
----                                ---          --------                        ---
(4-CHLORO-O-TOLOXY)ACETIC ACID      94-74-6      (4-CHLORO-O-TOLOXY)ACETIC ACID  (4-CHLORO-2-METHYLPHENOXY)ACETIC
                                                                                 2-METHYL-4-CHLOROPHENOXYACETIC
                                                                                 AGROXONE
                                                                                 MCP
                                                                                 MCPA
                                                                                 METHOXONE
-------------------------------------------------------------------------------------------------------------------
2,4,5-T                             93-76-5      2,4,5-T                         (TRICHLOROPHENOXY)ACETIC ACID
-------------------------------------------------------------------------------------------------------------------
2,4,5-TP                            93-72-1      2,4,5-TP                        (TRICHLOROPHENOXY)PROPIONIC ACID
                                                                                 SILVEX
-------------------------------------------------------------------------------------------------------------------
2,4-D                               94-75-7      2,4-D                           (DICHLOROPHENOXY)ACETIC ACID
                                                                                 2,4-D
-------------------------------------------------------------------------------------------------------------------
2,4-DICHLOROPHENOXYBUTYRIC ACID                  2,4-DICHLOROPHENOXYBUTYRIC ACID 2,4-DB
-------------------------------------------------------------------------------------------------------------------
3-CHLORO-1,2-PROPANEDIOL            96-24-2      3-CHLORO-1,2-PROPANEDIOL        MONOCHLOROHYDRIN
-------------------------------------------------------------------------------------------------------------------
AMETRYN                             834-12-8     AMETRYN                         AMETREX
                                                                                 AMETRYNE
-------------------------------------------------------------------------------------------------------------------
BENTAZON                            25057-89-0   BENTAZON                        BENTAZONE
-------------------------------------------------------------------------------------------------------------------
BHC(ALPHA)                          319-84-6     BHC(ALPHA)                      ALPHA-BENZENE HEXACHLORIDE
                                                                                 HEXACHLOROCYCLOHEXANE(ALPHA)
-------------------------------------------------------------------------------------------------------------------
BHC(BETA)                                        BHC(BETA)                       BETA-BENZENE HEXACHLORIDE
                                                                                 HEXACHLOROCYCLOHEXANE(BETA)
-------------------------------------------------------------------------------------------------------------------
BHC(TECHNICAL)                                   BHC(TECHNICAL)                  HEXACHLOROCYCLOHEXANE(TECHNICAL)
-------------------------------------------------------------------------------------------------------------------
CARBARYL                            63-25-2      CARBARYL                        SEVIN
-------------------------------------------------------------------------------------------------------------------
CARBOPHENOTHION                     786-19-6     CARBOPHENOTHION                 TRITHION
-------------------------------------------------------------------------------------------------------------------
CHLORAMBEN                                       CHLORAMBEN                      AMBIBEN
                                                                                 AMIBEN
                                                                                 AMIBIN
                                                                                 AMOBEN
                                                                                 CHLORAMBED
                                                                                 CHLORAMBENE
-------------------------------------------------------------------------------------------------------------------
CHLOROBENZENE                       108-90-7     CHLOROBENZENE                   MONOCHLOROBENZENE
-------------------------------------------------------------------------------------------------------------------
CHLOROPROPHAM                                    CHLOROPROPHAM                   CIPC
                                                                                 ISOPROPYL N(3-CHLOROPHENYL)CARBA
-------------------------------------------------------------------------------------------------------------------
CYANAZINE                           21725-46-2   CYANAZINE                       BLADEX
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PARM                              CAS         FULLNAME                        SYN
----                              ---         --------                        ---
CYCLOHEXYLCHLORIDE                542-18-7    CYCLOHEXYLCHLORIDE              CHLOROCYCLOHEXANE
--------------------------------------------------------------------------------------------------------------------------
CYCLONITE                         121-82-4    CYCLONITE                       HEXOGEN
--------------------------------------------------------------------------------------------------------------------------
DACTHAL                                       DACTHAL                         CHLOROTHAL
                                                                              DACTHALOR
                                                                              DCP
                                                                              DCPA
--------------------------------------------------------------------------------------------------------------------------
DALAPON                           75-99-0     DALAPON                         DICHLOROPROPIONIC(2,2) ACID
--------------------------------------------------------------------------------------------------------------------------
DBCP                              96-12-8     DBCP                            1,2-DIBROMO-3-CHLOROPROPANE
                                                                              3-CHLORO-1,2-DIBROMOPROPANE
                                                                              FUMAZONE
                                                                              NEMAFUME
                                                                              NEMAGON
--------------------------------------------------------------------------------------------------------------------------
DEMETON                           8065-48-3   DEMETON                         MERCAPTOPHOS
--------------------------------------------------------------------------------------------------------------------------
DI-ALLATE                         2303-16-4   DI-ALLATE                       AVADEX
--------------------------------------------------------------------------------------------------------------------------
DICHLONE                          117-80-6    DICHLONE                        2,3-DICHLORO-1,4-NAPHTHO
--------------------------------------------------------------------------------------------------------------------------
DICHLOROBENZENE(1,2)              95-50-1     1,2-DICHLOROBENZENE             O-DICHLOROBENZENE
                                                                              ORTHO-DICHLOROBENZENE
--------------------------------------------------------------------------------------------------------------------------
DICHLOROBENZENE(1,4)              106-46-7    1,4-DICHLOROBENZENE             PARA-DICHLOROBENZENE
--------------------------------------------------------------------------------------------------------------------------
DICHLOROETHANE(1,2)               107-06-2    1,2-DICHLOROETHANE              DICHLOROETHANE-1,2
                                                                              ETHYLENE DICHLORIDE
                                                                              SYM-DICHLOROETHANE
--------------------------------------------------------------------------------------------------------------------------
DICHLOROETHYLENE(1,1)             75-35-4     1,1-DICHLOROETHYLENE            1,1-DICHLOROETHENE
--------------------------------------------------------------------------------------------------------------------------
DICHLOROETHYLENE(1,2-CIS)         156-59-2    1,2-DICHLOROETHYLENE CIS        1,2-DICHLOROETHENE
                                                                              CIS-1,2-DICHLOROETHYLENE
--------------------------------------------------------------------------------------------------------------------------
DICHLOROETHYLENE(1,2-TRANS)       156-60-5    1,2-DICHLOROETHYLENE TRANS      TRANS-1,2-DICHLOROETHYLENE
--------------------------------------------------------------------------------------------------------------------------
DICHLOROPHENOL(2,4)               120-83-2    2,4-DICHLOROPHENOL              DICHLOROPHENOL 2,4
--------------------------------------------------------------------------------------------------------------------------
DIOXIN(D2CDD)                                 D2CDD                           DICHLORODIBENZO-P-DIOXIN
--------------------------------------------------------------------------------------------------------------------------
DIOXIN(H6CDD)                                 H6CDD                           HEXACHLORODIBENZO-P-DIOXIN
--------------------------------------------------------------------------------------------------------------------------
DIOXIN(M1CDD)                                 M1CDD                           MONOCHLORODIBENZO-P-DIOXIN
--------------------------------------------------------------------------------------------------------------------------
DIOXIN(O8CDD)                                 O8CDD                           OCTACHLORODIBENZO-P-DIOXIN
--------------------------------------------------------------------------------------------------------------------------
DIOXIN(P5CDD)                                 P5CDD                           PENTACHLORODIBENZO-P-DIOXIN
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PARM	CAS	FULLNAME	SYN
DIOXIN(T3CDD)		T3CDD	TRICHLORODIBENZO-P-DIOXIN
DIOXIN(T4CDD)		T4CDD	TETRACHLORODIBENZO-P-DIOXIN
ETHYLAMINE	75-04-7	ETHYLAMINE	MONOETHYLAMINE
ETHYLENE DIBROMIDE	106-93-4	ETHYLENE DIBROMIDE	1,2-DIBROMOMETHANE EDB
FURAN(D2CDF)		D2CDF	DICHLORODIBENZOFURAN
FURAN(H6CDF)		H6CDF	HEXACHLORODIBENZOFURAN
FURAN(M1CDF)		M1CDF	MONOCHLORODIBENZOFURAN
FURAN(O8CDF)		O8CDF	OCTACHLORODIBENZOFURAN
FURAN(P5CDF)		P5CDF	PENTACHLORODIBENZOFURAN
FURAN(T3CDF)		T3CDF	TRICHLORODIBENZOFURAN
FURAN(T4CDF)		T4CDF	TETRACHLORODIBENZOFURAN
HEPTACHLOR & HEPTACHLOR EPOXIDE	76-44-8+HE	HEPTACHLOR & HEPTACHLOR EPOXIDE	HEPTACHLOR
LINDANE	58-89-9	LINDANE	HEXACHLOROCYCLOHEXANE-GAMMA
METHACRYLIC ACID	79-41-4	METHACRYLIC ACID	METHYL METHACRYLATE
METHYL DEMETON	8022-00-2	METHYL DEMETON	METHYL SYSTOX
METHYL PARATHION	298-00-0	METHYL PARATHION	METAPHOS
METHYLENE CHLORIDE	75-09-2	METHYLENE CHLORIDE	DICHLOROMETHANE
NAPHTHOL(2)	135-19-3	2-NAPHTHOL	B-NAPHTHOL
PARATHION	56-38-2	PARATHION	THIOPHOS
PCB		PCB	PCB'S POLYCHLORINATED BIPHENYL
PENTACHLORONITROBENZENE	82-68-8	PENTACHLORONITROBENZENE	TERRACHLOR
PENTACHLOROPHENOL	87-86-5	PENTACHLOROPHENOL	PCP
PROMETRYNE	7287-19-6	PROMETRYNE	PROMETRINE
PROPAZIN		PROPAZIN	PROPAZINE

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                        #######   PALIS SYSTEM ALIAS REPORT---04/18/88   #######
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    PARM                             CAS          FULLNAME                         SYN
    ----                             ---          --------                         ---
    PROPOXUR                         114-26-1     PROPOXUR                         BAYGON
-------------------------------------------------------------------------------------------------------------
    SULFATE                                       SULFATE                          SULPHATE
-------------------------------------------------------------------------------------------------------------
    SULPHATE                                      SULPHATE                         SULFATE
-------------------------------------------------------------------------------------------------------------
    TCP                                           TCP                              1,2,3-TRICHLOROPROPANE
-------------------------------------------------------------------------------------------------------------
    TETRACHLOROETHANE(1,1,2,2)       79-34-5      1,1,2,2-TETRACHLOROETHANE        ACETYLENE TETRACHLORIDE
                                                                                   BONOFORM
                                                                                   CELLON
                                                                                   SYM-TETRACHLOROETHANE
                                                                                   TETRACHLOROETHANE
-------------------------------------------------------------------------------------------------------------
    TETRACHLOROETHYLENE              127-18-4     TETRACHLOROETHYLENE              TETRACHLOROETHENE
-------------------------------------------------------------------------------------------------------------
    TRICHLOROETHYLENE                79-01-6      TRICHLOROETHYLENE                TRICHLOROETHENE
-------------------------------------------------------------------------------------------------------------
    TRINITROMETHANE                  517-25-9     TRINITROMETHANE                  NITROFORM
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FOOTNOTES

*	limit represents a cancer risk of less than $1x10^{-5}$ for a lifetime exposure
**	limit presented as a $1x10^{-6}$ risk level
+	term "trihalomethanes" comprises chloroform, bromodichloromethane, chlorodibromomethane, and bromoform
++	limit based on 5% of the maximum allowable daily intake (10pg/kg/day) for a 60 kg individual consuming 2 L/day
***	total kjeldahl nitrogen minus ammonia nitrogen
#	limit based on a $1x10^{-6}$ cancer risk
##	limit based on a 4 kg infant
###	as MG/L SiO2
+++	pH is quoted as a range from 6.5-8.5

TABLE 1

UNITS OF MEASURE

MG/L	milligrams per litre (parts per million)
UG/L	micrograms per litre (parts per billion)
NG/L	nanograms per litre (parts per trillion)
PG/L	picograms per litre (parts per quadrillion)
NTU	nephelometric turbidity unit
FTU	formazin turbidity unit
BECQ/L	becquerel per litre (1 BECQ/L = 27 PCI/L)
PCI/L	picocurie per litre
D#	dilution number at 25 °C
F/L	fibres per litre
uS/CM	microsiemens per centimetre at 20 °C
TCU	true colour units (platinum cobalt scale)
L/M3	litres per cubic metre
STDU	standard unit of measure

TABLE 2

PALIS SYTEM REFERENCE FILE REPORT

Refcode	Reference
1	Ontario Drinking Water Objectives, revised 1983, Ontario Ministry of the Environment, ISBN 0-7743-8985-0.
2	Public Drinking Water Systems, DER 1984, 17-22.104(1) -- 17-22.104(1)(a)3 (Florida State).
3	California State Department of Health Services, Sanitary Engineering Branch, Revision 110483.
4	Guidelines For Drinking Water Quality Volume1: Recommendations, World Health Organization, 1984 ISBN 92 4 154168 7.
5	Guidelines for Canadian Drinking Water Quality 1978, Ministry of National Health and Welfare ISBN 0-660-10429-6 (updated 1988).
6	EEC Drinking Water Directive, International Environment Reporter, January 14, 1981, 151:0706 -- 151:0712.
7	United States Environmental Protection Agency Health Advisories, Office of Drinking Water, March 31,1987
8	EPA Moves Toward Final Drinking Water Regs, AWWA Mainstream, December 1985.
9	Ambient Water Quality Criteria, U.S. Environmental Protection Agency, Office of Water Regulations and Standards, Update 1.0 September 2, 1986.
10	Organic Pesticides and Other Organic Contaminants in Drinking Water, Concentration, Toxicity and Suggested No-Adverse-Effect Levels, Drinking Water and Health, National Academy of Science.

Refcode	Reference
11	Limits for Target Organics in Drinking Water, Journal AWWA volume 77#7 pp.88-96, 1985.
12	The Maximum Permissable Concentrations in the USSR for Harmful Substances in Drinking Water, D. Stofen, Toxicology 1, pp. 187-195, 1973.
13	Comparison of United States and Canada Drinking Water Regulations, Edward J. Calabrese, Regulatory Toxicology and Pharmacology 3, pp. 417-427, 1983.
14	Pesticides Interim Guideline Concentrations, Issue Report - Pesticides In Well Water, January 9, 1986, 86/IR-008 (superceded by update to reference 5).
15	Memo Re: Gloucester Waste Disposal Site Clean Up - Water Quality Objectives, Dr. E. McCloskey, Ontario Ministry of Labour, May 1987.
16	Water Quality Regulations, Surface Water and Groundwater Classifications and Standards, New York State, Department of Environmental Conservation.
17	Interim Drinking Water Guidelines Province of Ontario, Provided by Health and Welfare Canada, August 1986.
18	Proposed IMAC for PCDDs and PCDFs in Drinking Water Fact Sheet on Dioxin - Dioxin Background, Ontario Ministry of Environment, 1986.
19	Organic Contamination in Groundwater, Journal AWWA Volume 79 pp. 37-42, August 1987.
20	Information Alert - Volatile Organic Compounds From US Environmental Protection Agency, R. MacFarlane, Hazardous Contaminants Branch, Ontario Ministry of Environment, July 1987.
21	Ground Water Quality Protection, State and Local Strategies, National Academy Press, Washington D.C. 1986.

Refcode	Reference
22	Information Alert - Pesticides From National Agricultural Chemicals Association, R. MacFarlane, Hazardous Contaminants Branch, Ontario Ministry of Environment, November 1985.
23	Handling the Threat of Contaminated Water Supplies, Opflow Volume 9 number 3 pp.3-4, March 1983.
24	Drinking Water and Health, Volume 4 pg.203, National Academy Press, Washington D.C. 1982.
25	10 NYCRR Part 5: Drinking Water Regulations, New York State Water Quality Regulations.
26	Organic Chemical Action Steps for Drinking Water, Bureau of Public Water Supply Protection, New York State Department of Health - Office of Public Health, December 1985.
27	Health Advisories on Pesticides, US Environmental Protection Agency, PB88-113543/LA, August 1987.
28	International Standards for Drinking Water, I.M. Sayre, Journal AWWA Volume 80 #1 pp.54-60, 1988

APPENDIX 1

BACKGROUND INFORMATION ON GUIDELINE-SETTING PROCEDURES

INTRODUCTION

Even when drinking water is obtained from relatively unpolluted sources it can be expected to contain a wide variety of chemicals, both organic and inorganic, at very low concentrations. This knowledge has lead to concern about the possibility of long term health effects from consumption of such waters. Drinking Water standards, objectives or guidelines are designed to make sure that any water intended for human consumption contains no disease causing organisms, or hazardous concentrations of toxic chemicals or radioactive substances. Aesthetic parameters such as temperature, taste, odour and colour which determine the pleasantness of water to drink should also be controlled. Consumers may seek other, possibly hazardous sources of drinking water, if the municipal supply is aesthetically unsatisfactory.

Similarly other water quality guidelines may ensure that surface waters used as a source for drinking water and/or from which fish are eaten, and groundwaters contain no chemicals at levels that can be construed as hazardous.

Agencies may monitor for many different substances in drinking and other waters. While many chemicals may be reported as occurring in drinking waters throughout the world not all can be targeted for guidelines. Some are found sporadically, very few occur regularly. Substances for which drinking water guidelines are set generally are selected using certain criteria which may vary from agency to agency.

The selection criteria used by WHO are:

1. documented evidence that the substance can cause acute or chronic illness

2. evidence that the substance is known to occur in significant concentrations in drinking water

3. evidence that the substance has a relatively high frequency of detection in water

4. availability of reliable analytical methods for monitoring and control purposes

5. evidence that the concentration of the substances in water can be controlled.

Prior to establishing any numerical limits, the risk of a substance to the population must be assessed. The potential hazard of a given chemical combined with the level of exposure are the two major components in defining the risk of adverse effects occurring in a given population.

HAZARD + EXPOSURE = RISK

Because hazard is a property of the chemical itself, if the risk to the population is unacceptable the exposure must change, and specific controls may be imposed in order to eliminate or reduce the risk to an acceptable level. One method of controlling exposure is to set guidelines for the amount of a chemical substance which is allowable in drinking water.

There are two major steps in the guideline-setting procedure - Hazard Assessment and Risk Assessment/Management.

HAZARD ASSESSMENT

The first step in guideline (numerical limit) development is therefore hazard assessment. This involves qualitative and quantitative analysis to determine the potential effect a chemical could have in terms of health , safety or environmental consequences. Data sources might include the results of animal or non-animal tests, results of epidemiological studies, physical and chemical properties and structure. There is considerable uncertainty associated with this process for the following reasons:

- types of health effects may vary with varying exposure and concentration of the same chemical
- different species of animals respond differently to the same concentration of the same chemical
- individuals of the same species may show a wide range in sensitivity to the same chemical
- not all studies reported in the literature are adequately designed or conducted
- chemicals can interact to enhance or diminish a toxic effect.

To determine the amount of a chemical substance that may be ingested without significant risk to the individual a different approach is used for carcinogens (cancer causing substances) as opposed to non-carcinogens.

a) Acceptable Daily Intake-Safe Factor (ADI-SF) Approach

The Acceptable Daily Intake (ADI) of a chemical is defined as the dose that is anticipated to be without lifetime risk when taken daily.This approach is usually applied to substances which are non-carcinogens. It is based on the determination of the amount of chemical that shows no adverse effect in animal studies (this is known as the no-observed adverse effect level (NOAEL)), divided by a suitable uncertainty ("safety") factor. The uncertainty factor chosen can range from 10 to 10,000 or more depending on criteria such as:

- completeness of data
- nature of toxicological data
- severity of lesions
- chemical and kinetic characteristics
- differences in species response

ADI = NOAEL / safety factor (uncertainty)

Some examples of Safety factors which may be applied are:

Differences between species		x10
Differences within species (sensitive members)	(additional)	x10
Sub-chronic to long term extrapolation	(additional)	x10
Non-reversible effects	(additional)	x2-x25

Safety factors therefore can be as small as 10, or as large as 25000.

In many instances, a qualitative assessment or professional judgement will be necessary when assigning the safety factors; this may differ from agency to agency, as may the criteria used and the magnitude of the safety factors. Thus, the ADI values developed by different agencies may not be the same.

The ADI-SF approach assumes a threshold in dose response (ie. there is some dose or exposure where no adverse effect is observed). The safety factor provides the added confidence that no adverse effect will occur at lower levels of exposure even to the most sensitive members of the population.

b) Unit Risk Estimate Approach

In the case of carcinogens, the concept of "threshold" has not found wide acceptance ie. it is felt that exposure to any level of the substance produces some effect. It is now more common to estimate the level of risk than it is to estimate the ADI for a carcinogen. This yields a 'unit risk estimate' rather than an ADI. Estimation of risk involves development of suitable dose-response data in a lifetime exposure (carcinogenicity) bioassay of animals and extrapolation from the observed dose-response to low-dose exposures in humans. A number of mathematical models may be used to estimate the dose that is expected to be associated with a specific level of risk (probability) of an adverse health outcome (eg. the linear one-hit model,the multi-stage model etc); each model may provide a widely differing value for the same level of risk. For carcinogens, therefore, agreement between agencies on unit risk estimates will only be good if similar risk estimation models are used. Some agencies will have the risk assessment model which must be used to determine the guideline level specified by their regulations. A risk level of 1 in 100,000 or in 1,000,000 is commonly used in the calculations. The unit risk estimate is thus the amount of a chemical which may be ingested over a lifetime without significant risk.

Because of the number and magnitude of safety factors used in the ADI-SF approach and the nature of the risk assessment models, risks are usually overestimated rather than under estimated ie. the levels of substances determined by either method to be without significant risk are highly conservative.

2. RISK ASSESSMENT/MANAGEMENT

The second step of the evaluation process leading to a numerical limit (exposure limit) involves risk management. Development of a numerical limit for a substance in drinking water by a jurisdiction takes into account the ADI or unit risk estimates calculated for the substance under review and several other factors such as:

- estimates of intake of the contaminant via all routes of exposure (air, water, food and consumer products) and the percentage of the total daily intake that comes from the exposure route under consideration, in this case drinking water;

- local differences in exposures (variations in consumption patterns, specific sites with high level contamination, etc.);
- existence of special populations at risk (pregnant women, infants, fish eaters, native population);
- the level at which analytical methodologies can detect, measure and confirm the presence of the contaminant;
- the costs and benefits of restricting or banning a manufactured chemical;
- available treatment technologies; and
- constraints prescribed or implied in law regarding the intent, development and use of numerical limits.

Since the application of these factors will tend to vary from agency to agency, different numerical limits may well result, even if the same "ADI" or "unit risk estimate" is used initially.

Example:

DRINKING WATER GUIDELINE CALCULATION

Generally drinking water is not the major source of exposure to chemicals and account must be made for exposure from food, air, occupation and lifestyle. Twenty percent of the ADI is customarily allocated to drinking water. Where most of the intake may be accounted for by either air or food, as may be the case with pesticides, one percent is allocated to drinking water. For drinking water, most guidelines are based on the assumption that 2 l/day will be consumed by a 70 kg person over a period of 70 years, again these assumptions may vary slightly from jurisdiction to jurisdiction. Drinking water guidelines are determined based on the ADI or unit risk estimate of a chemical, as follows:-

ADI for a certain chemical or unit risk estimate = 10mg/day/kg
(intake associated with a given level of risk)

ADI or unit risk estimate for a 70 kg man = 700 mg/day

20% allocation to drinking water = 140 mg/day

Assuming 2 litres/day consumption = 70 mg/litre

Hence: drinking water guideline for that chemical= 70 mg/litre

This value may be modified upon application of the other factors involved in risk assessment/management such as cost/benefits of restrictions, local conditions, available treatment technologies etc.

Although most agencies have the same general goals of protecting the public's health from pollutants in water, how they go about achieving their goals may vary markedly.

A case in point is provided by drinking water guidelines for trihalomethanes (THM) developed by the USEPA and Canada. At the 100 ug/l MCL, EPA has estimated, using the multi-stage model for cancer risk estimates, that up to four cases of cancer (liver and/or kidney) may occur per 10,000 people who consume 2 litres of water per day over 70 years. The Canadian process used the more conservative linear one-hit model and at the 350 ug/l MAC, estimates predict that one cancer case (kidney) may occur per 2.5 million people per year who consume 2 litres of water per day; this amounts to 3.5 persons per 100,000 over 70 years if put into USEPA terminology. The level of 350 ug/l is considered a maximum level not to be exceeded while the 100 ug/l MCL of the EPA is applied to an average of four quarterly values. The Canadian standard is based on human health considerations, while in the EPA regulation achievability and the premise that control of THM levels during the water treatment process will also control levels of other chlorinated organics were also factors considered in setting the final limit.

It is of great potential benefit to compare and evaluate the guidelines developed by other agencies. However it is necessary to carefully examine and recognize the different approaches and assumptions used in establishing them and also to recognise the risk level associated with each guideline.

APPENDIX 2

ONTARIO DRINKING WATER OBJECTIVES @

Ontario Drinking Water Objectives were first approved by the Ontario Water Resources Commission in 1964. The parameters given objectives were principally those contained in the 1962 document "United States Public Health Service Drinking Water Standards". This document has also served as the basis for "Canadian Drinking Water Standards and Objectives" published in 1968. In 1974, a Federal/Provincial Working Group on Drinking Water was formed under the auspices of the Federal/Provincial Advisory Committee on Environmental and Occupational Health. The Working Group was formed to ensure consistency in health parameters on a national scale. The parameters considered were chemical, physical, microbiological, radiological and aesthetic in nature. It was decided, after the latest (1978) Federal Guidelines for Drinking Water Quality were completed, to raise the status of the Working Group to a permanent Sub-Committee on Drinking Water.

The Federal/Provincial Sub-Committee on Drinking Water was set up to:

- set priorities for parameters needing limits;
- review recommendations (based on toxicological data) put forward by Health and Welfare Canada; and
- ultimately arrive at a limit based on toxicological data, levels and frequency of occurrence and socio-economic considerations.

As new data becomes available, these guidelines are periodically reviewed.

Ontario usually adopts the Canadian Drinking Water Guidelines, as Ontario Drinking Water Objectives, although for certain parameters Ontario's limits may be more stringent; further, Ontario may set its own limits for some substances, should the need arise.

Criteria for Ontario Drinking Water Objectives (ODWO)

There are three types of criteria set; MAC's (Maximum Acceptable Concentrations), IMAC's (Interim MAC's) and MDC's (Maximum Desirable Concentrations).

MACs are health based numbers that should not cause adverse health effects with exposure to that level for a lifetime. They are frequently based on animal feeding studies because sufficient human toxicological information is rarely available.

IMACs are set for substances with known chronic effects in mammals and for which there are no established maximum acceptable concentrations. Although toxicological, epidemiological and health data are available for such substances the data are subject to public and scientific debate before agreement on a maximum acceptable concentration.

MDCs are set for those parameters that effect the aesthetic quality of the water or may interfere with good water quality control practices.

Generally, municipalities are responsible for plumbing inspection and water distribution for communal water systems covered by the Ontario Water Resources Act (OWRA). Public Utilities Commissions are responsible for the treatment and distribution of water under the auspices of the municipality; hence the municipality has the ultimate responsibility for the quality of water reaching consumers. Private operators of water supply systems governed by the OWRA, are responsible for their water quality and local health agencies are responsible for water supplies not included under the Act (those serving 5 or fewer private residences).

To ensure the provision of water of adequate quality and quantity, a Certificate of Approval is issued to a proponent for the construction of a new waterworks or for alteration to an existing works stating the terms and specific conditions. Factors which influence the authorization to use a certain water source will depend on the following:

- satisfactory quality and adequate quantity of the water source;
- adequate treatment facilities to consistently produce water free from health hazards and to minimize undesirable aspects of finished water quality;
- adequate capacity to meet peak demands without development of low pressures which could result in health hazards;

- enforcement of requirements to prevent development of health hazards and
- records of laboratory analysis showing consistent compliance with the water quality limits stated.

The Ministry of the Environment provides courses in complete operator education and ensures that proper monitoring programs are maintained. When routine sampling indicates guideline exceedence, monitoring is intensified (see ODWO*). If necessary, appropriate remedial measures are determined by the Ministry. Occasional short-term exceedences may be tolerated if medical evaluation indicates that injury to health will not occur.

@ extracted in part from a document prepared for the Hazardous Contaminants Coordination Branch by Bev Alder while on developmental assignment.

* Ontario Drinking Water Objectives revised 1983. Ontario Ministry of Environment ISBN 0-7743-8985-0 1984